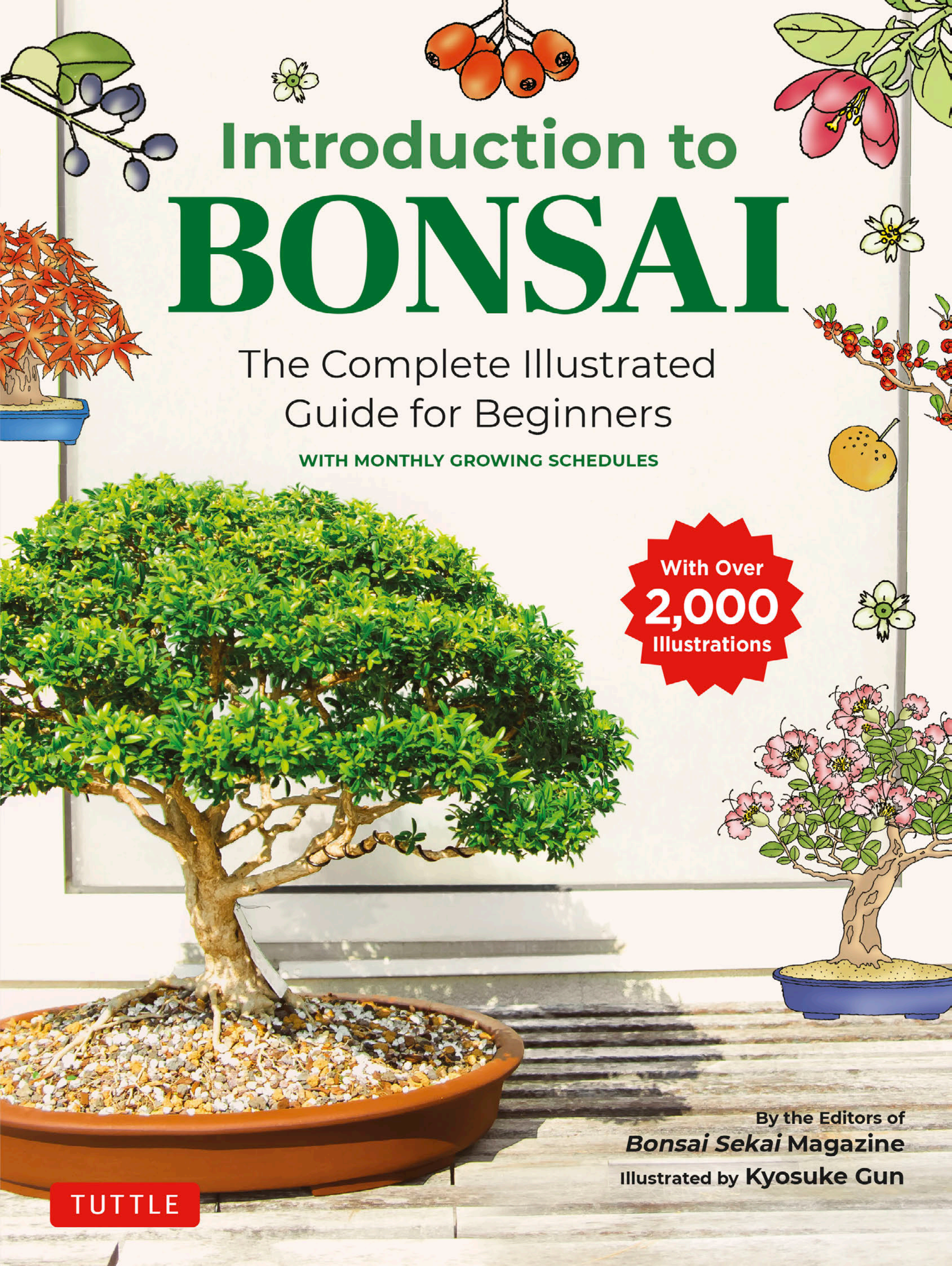

Introduction to
BONSAI

The Complete Illustrated Guide for Beginners

WITH MONTHLY GROWING SCHEDULES

With Over 2,000 Illustrations

By the Editors of
Bonsai Sekai Magazine
Illustrated by Kyosuke Gun

TUTTLE

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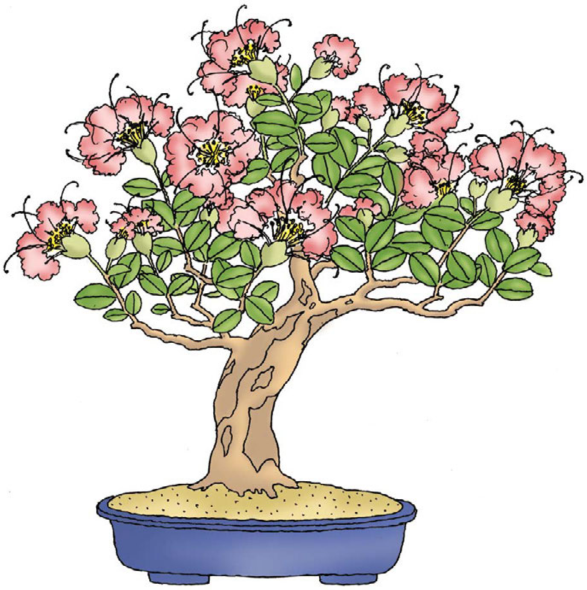
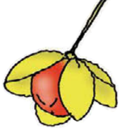


By the Editors of
***Bonsai Sekai* Magazine**
Illustrated by Kyosuke Gun

TUTTLE Publishing

Tokyo | Rutland, Vermont | Singapore



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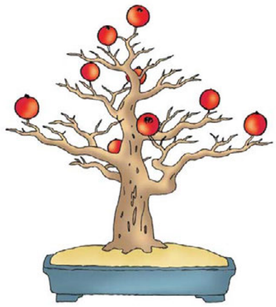

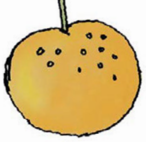

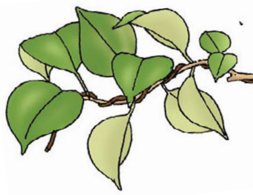

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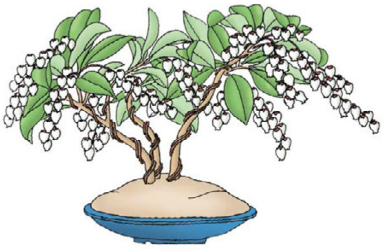
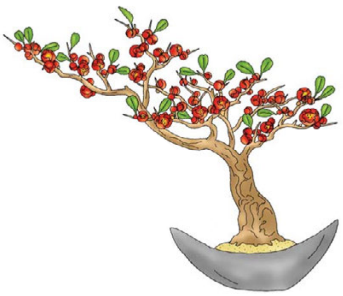




The Power of Small Bonsai

Small bonsai trees impart a charming look and feel to your modern living space!

My bonsai trees are placed on a rack on a balcony that gets poor lighting, but I can enjoy the bonsai experience without depriving them. To make up for the lack of sunlight, I use a grow light. My wife also participates in caring for the bonsai. It is a very important aspect of our free time.

"Even though it's contained in a small pot, the bonsai maintains its vitality. I am especially drawn to the 'evergreenness' of the pine variety. I also appreciate experiencing the transition of seasons that I cannot enjoy from my workplace."

—HIROMU KUMANISHI, 10-year bonsai enthusiast in Minato Ward, Tokyo.

ABOVE LEFT AND RIGHT Even in small, sterile places such as the entrance to an apartment, bonsai cleanse the atmosphere and make the space seem brighter. (These trees are under 8 inches / 20 cm.)

RIGHT Hiromu Kumanishi says that though the bonsai are small, he enjoys having this little spot of life and greenery in the middle of his busy life in a bustling city.

Even in small spaces such as a window sill, having a bonsai makes for a relaxing environment that's very popular among my students. It's not surprising that the appreciation of bonsai has spread across the globe.

"Trees in nature emit power and 'ki' (vital energy). Bonsai, on the other hand, channel that power through small pots and wire. Nevertheless, even though their energy is contained, they present themselves in such an artistic way."

—JESSIE LEE PARKER, yoga instructor and 4-year bonsai enthusiast in Setagaya Ward, Tokyo.

LEFT Jessie Lee Parker says that bonsai play an important role in creating a tranquil atmosphere during meditation sessions at his yoga studio.

I work in an office and decided to add some plants to my apartment because they help me relax. That's how it all began. I started with typical houseplants, but slowly introduced bonsai. Now I have many varieties. I take pictures of the blooming plants every day to appreciate their blossoms and growth. For me now, having bonsai in my life has become essential.

"After all, these are plants that are meant to be observed and appreciated. With each bend of a branch or with each bonsai I plant, I can see the uniqueness of the individual bonsai. I find this very appealing."

—RUTSUKO KANEKO, 6-year bonsai enthusiast in Suginami Ward, Tokyo.

ABOVE AND RIGHT Even in a cramped location, by placing a bonsai Rutsuko feels that she is bringing energy and vitality into her home. She says that being surrounded by her favorite plants is a spiritual aspect of her life.

Kaori Umezawa started attending classes at her local bonsai garden ten years ago. When she was in her twenties she moved into a well-lit apartment and started taking bonsai more seriously. Her garden, which is about 19.5 x 13 feet (6 x 4 meters), receives lots of sunlight.

The earlier you take on this hobby, the more trees you can care for and the longer you can enjoy the experience. In the art of bonsai, you are considered to be young and up-and-coming if you are in your fifties. In which case, you can still look forward to learning and achieving more for decades—maybe even another forty or fifty years.

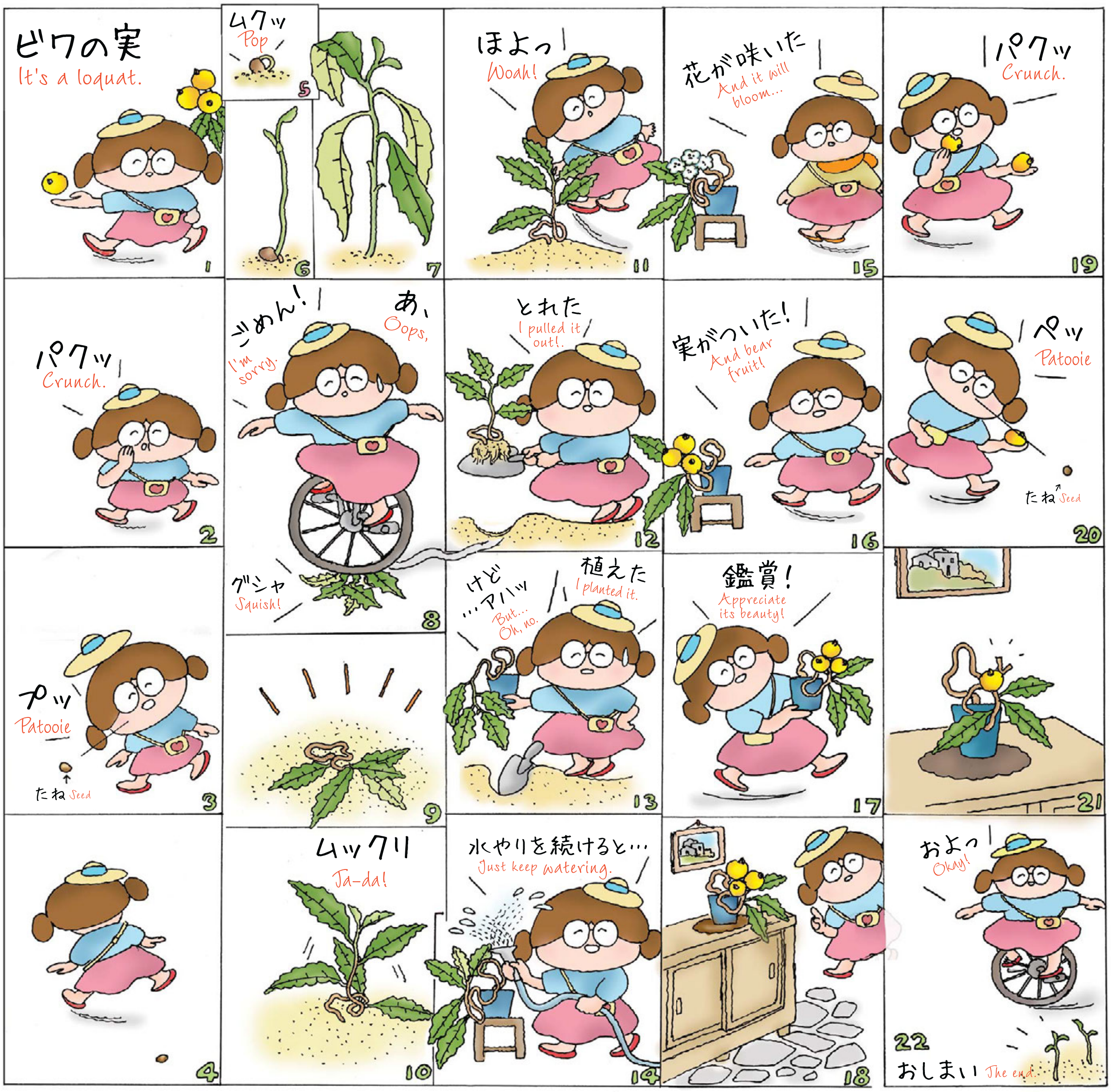
"The ability to find good trees is important, but I would like to be able to propagate them myself as well."

—YOSHI UMEZAWA, 10-year bonsai enthusiast in Ichihara City, Chiba Prefecture.

LEFT Living with bonsai allows one to truly take in the change of the seasons throughout the year. Mr. and Mrs. Umezawa begin and end each day by appreciating and talking about their bonsai. Sharing their observations and taking time to really enjoy their bonsai is a part of the passion for, and process of, caring for them.

"I want to pursue quality over quantity. From now on, I plan to put more effort into design, and show my bonsai in a gallery."

—KAORI UMEZAWA, **10-year bonsai enthusiast in Ichihara City, Chiba Prefecture.**

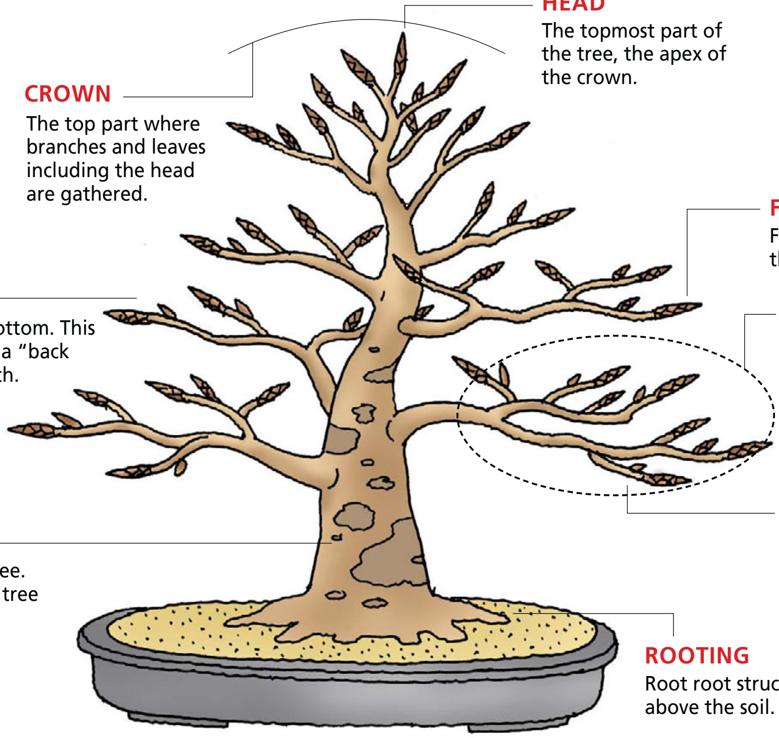

ビワの実
It's a loquat.
1
ムクッ
Pop
5
6
7
2
パクッ
Crunch.
3
プッ
Patooie
たね Seed
4
ごめん!
I'm sorry.
あ、
Oops,
グシャ
Squish!
8
9
ムックリ
Ja-da!
10
ほよっ
Woah!
11
とれた
I pulled it out!
12
植えた
I planted it.
けど…アハッ
But... Oh, no.
13
水やりを続けると…
Just keep watering.
14
花が咲いた
And it will bloom...
15
実がついた!
And bear fruit!
16
鑑賞!
Appreciate its beauty!
17
18
パクッ
Crunch.
19
ペッ
Patooie
たね Seed
20
21
およっ
Okay!
22
おしまい The end.

BASIC KNOWLEDGE FOR APPRECIATING A LIVING PIECE OF ART

How to Appreciate Bonsai

Let's learn the harmony of trees and pots, the vitality and divinity captured in a moment of time, and the way to appreciate bonsai of all kinds.

NAMES OF EACH PART



ROLE BRANCH
Branches that are essential for beauty, harmony and composition. In this bonsai, branches 1, 2, 3 and 4 play a role.

HEIGHT
The height from the head to the rooting.

CROWN
The top part where branches and leaves including the head are gathered.

HEAD
The topmost part of the tree, the apex of the crown.

FOURTH BRANCH
Fourth branch from the bottom.

THIRD BRANCH
The third branch from the bottom. This branch also plays the role of a "back branch" that brings out depth.

BRANCH SHELF
A grouping of twigs and leaves from a branch.

FIRST BRANCH
The branch nearest the base of the tree.

TRUNK
The thick, firm base of the tree. It grows more slender as the tree extends upward.

SECOND BRANCH
A branch above the first branch, often on the opposite side from the first branch.

ROOTING
Root root structure seen above the soil.

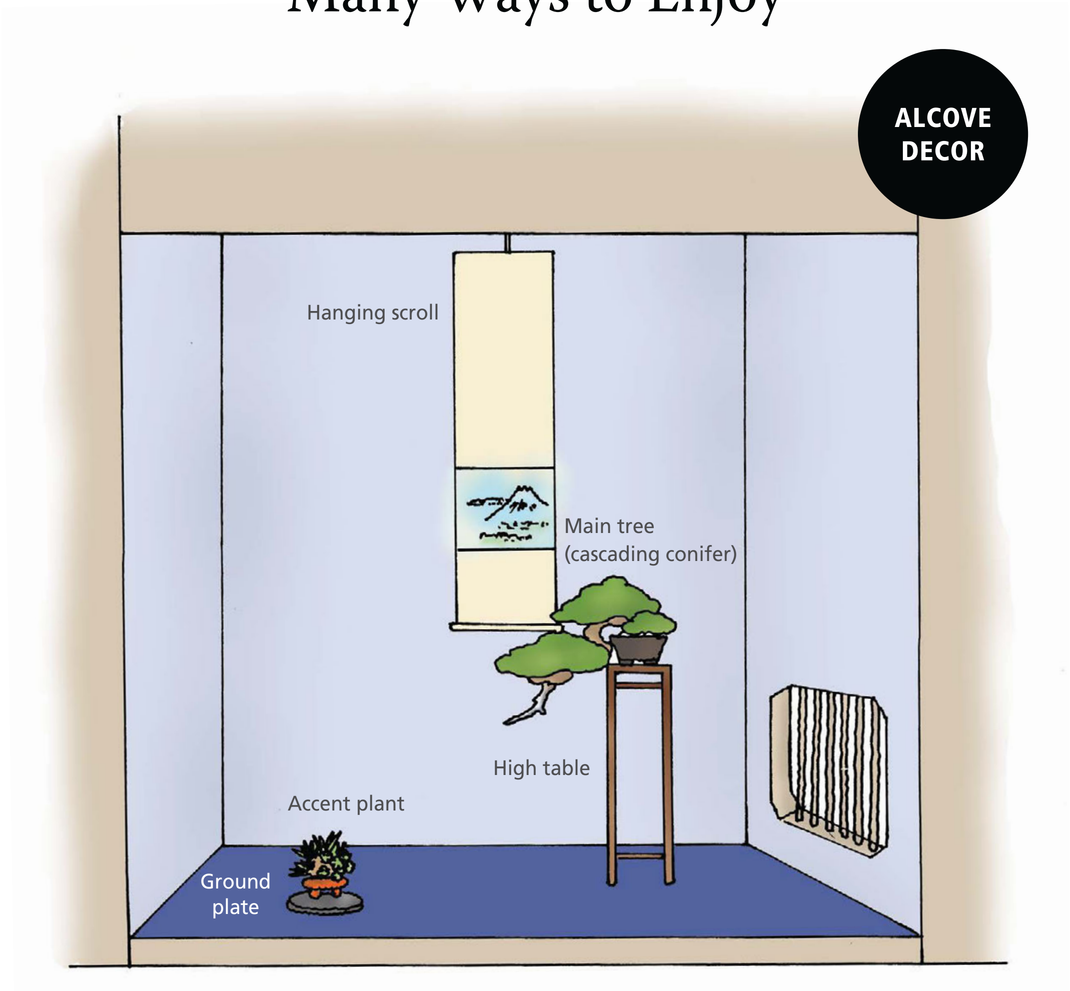
APPRECIATE THE BEAUTY OF THE FOUR SEASONS IN A SMALL LANDSCAPE

In twelfth-century China, trees and stones were placed on plate-like earthenware and were called *bonsan* or *bonkariyama*. Later, when the art was introduced to Japan, it evolved into the form we call "bonsai," and it became a common horticultural practice throughout the Edo period.

The art of container gardening is enjoyed around the world, but bonsai brings plants and containers into a "oneness" that allows us to appreciate the beauty of a landscape that is complete, yet contained.

It is impossible to bring the splendors of nature indoors on a grand scale, but it is possible to grace our homes with the sense of solemnity, elegance and solitude that are the essential charm of a bonsai tree. Imitating trees that have withstood many years of wind, rain and snow, the bonsai—with its winding branches, thick roots, rough bark, and white "bones" that come from season after season of death and rebirth—is a unique and self-contained natural world. It embodies a philosophy and a skill set that the Japanese have long cherished. It is an act of "nature worship" that harmoniously corresponds to all the characteristics of the four seasons.

Many Ways to Enjoy



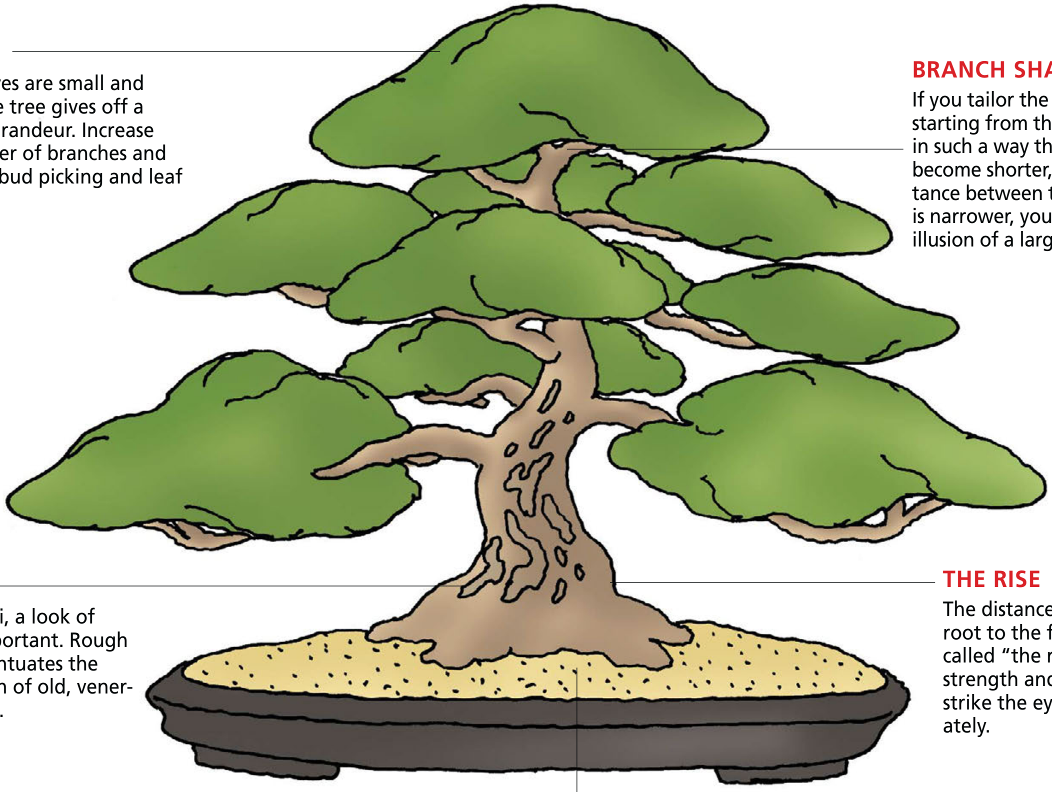
Here, a conifer cascading to the left is used as the main tree, and a hanging scroll is placed in such a way that branches superimpose the edge. Add grasses and flowers suitable for the season as a secondary bonsai or plant. The hanging scroll, main tree and the accent plant are placed in an irregular triangle. The depth elements here are the distant mountain in the scroll, the conifer in the middle, and undergrowth (grass or moss) on the floor in the foreground. This gives the alcove the sense of a full landscape.

A TRADITIONAL WAY OF DECORATING WITH THE MAGNIFICENCE OF NATURE

A traditional Japanese way to display bonsai is to create a harmonious arrangement in a confined space such as an alcove. The decoration of the alcove is called *tokokazari*. *Sekikazari*, which literally means "decorating a seat," pertains to the arrangement of bonsai in an area specifically for bonsai display.

As shown above, alcove decoration consists of three elements: the main tree, an accompanying bonsai (the accent), and a hanging scroll. When the main tree is a conifer, the flowers and grasses accompanying it should represent the season. The main tree is placed in such a way that it flows toward the hanging scroll, and a high table and a ground plate are laid beneath the bonsai. Choose a hanging scroll (or other wall hanging in a less traditional space) that complements the main tree well. The *sekikazari* is a two-part arrangement consisting of main tree and accent.

For the background, there are principles of harmony that have been in use for many generations. On the other hand, there are a variety of arrangements tailored to modern living spaces, such as apartments. You get beautiful results when you keep the basic principles in mind, but how you incorporate those ideas is up to you.



LEAVES

If the leaves are small and dense, the tree gives off a sense of grandeur. Increase the number of branches and leaves by bud picking and leaf cutting.

BRANCH SHAPE

If you tailor the branches, starting from the first branch, in such a way that they become shorter, and the distance between the branches is narrower, you'll create the illusion of a large tree.

BARK

For bonsai, a look of age is important. Rough bark accentuates the impression of old, venerable trees.

THE RISE

The distance from the root to the first branch is called "the rise," and its strength and gracefulness strike the eye immediately.

ROOTING

Reminiscent of a thick, firmly-rooted tree with a strong sense of stability.

TIPS FOR ENJOYING THE WHOLE AND EACH PART

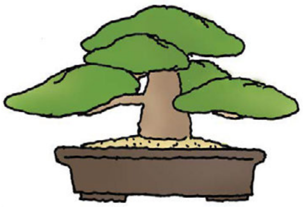
When viewing a bonsai, stand in front of it and first take in the whole setting, including the pots and table, before moving on to the details. Then, scrutinize the middle of the tree height, and each part from the roots, the rise, the trunk, up to the branches, leaves and the flowers.

The illustration above suggests a large, old tree. The rise from the base to the first branch is a gentle curve that appears to have weathered many windy storms, the rough bark gives the impression of advanced age and the leaves convey a sense of vitality. The shape from the root to the rise is like a mountain ridge.

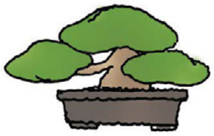
Bonsai are carefully cultivated and managed by human hands, and some have been trained for hundreds of years. The feeling of antiquity, sense of vitality and the skill that has gone into creating these things are already evident. If you have a young tree, you can visualize how, with care, its features will evolve. Bonsai is ideal when the tree is in its completed form (full season), so fall and winter are important times. Thus, the venerable bonsai is like an elderly person who feels long settled into the rhythms of life.

Types of Bonsai

SIZE CLASSIFICATION

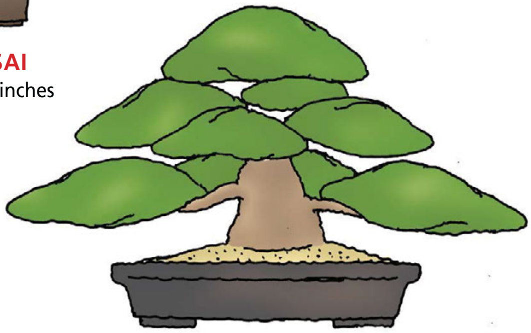


MEDIUM BONSAI
Tree height 8 to 15¾ inches
(20 to 40 cm)



SMALL BONSAI
Tree height lower than 8 inches (20 cm)

Bonsai lower than 4 inches (10 cm) might
also be called "Mini-Bonsai"



LARGE BONSAI
Tree height taller than 15¾ inches
(40 cm)

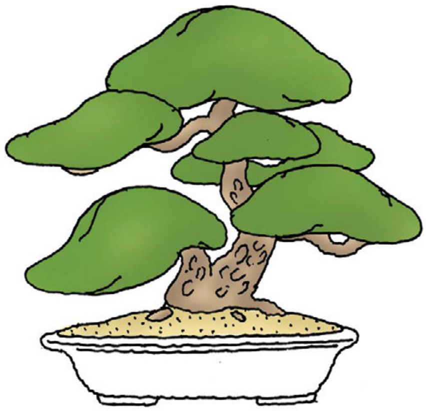
THERE ARE FIVE CATEGORIES BASED ON THE MAIN FEATURES

Bonsai trees are categorized based on the main features for each tree species. They are classified into 5 types: conifers, foliage plants, flowering plants, fruiting plants and herbaceous plants.

These can be broadly divided into woody and herbaceous plants. This book focuses primarily on introducing different trees. Except for evergreen conifers, trees are categorized as miscellaneous trees.

Bonsai, which exhibits various expressions as the seasons change, presents varying periods of optimal viewing, depending on the type. The flowering trees are viewed in full bloom from spring to summer, and the fruiting trees are viewed in autumn when the fruit is ripe and dark. The leaves are gorgeous in the autumn when they fall, but the trunks and branches after the defoliation—that is, the appearance of the winter tree—are also a highlight.

Conifers are healthy and long-lived, so they are representative of bonsai and a typical Japanese landscape. You can view it all year round, but autumn, with its fresh greenery, is the most beautiful time to view a conifer. Here are some primary features and ways to enjoy them.

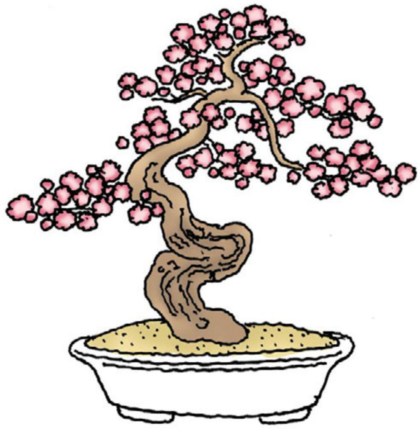


CONIFERS

When considering bonsai, many people think of pine trees. Evergreen conifers enjoy green needles all year round. There are many famous trees which have aged well, such as the renowned Tokugawa Iemitsu Goyomatsu. Traditional bonsai decor calls for using a conifer as the centerpiece.

Graceful, powerful conifers can be trained to take a variety of shapes to make them both personal and unique.

Among them, black pine, Japanese white pine, and Chinese juniper are called *misanke*, and are some of the most popular of tree species.



FLOWERING TREES

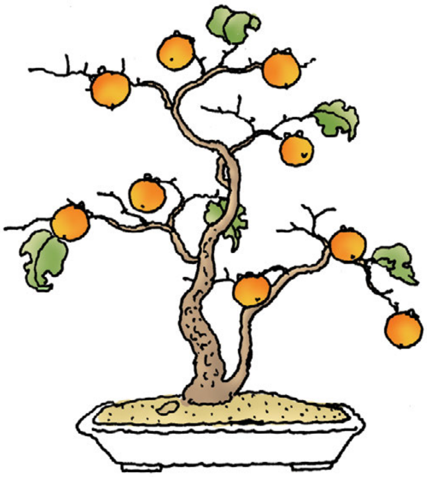
The trees that are known for beautiful blooms are classified as flowering trees. Vibrant colors and fragrances create an attractive and perfumed seasonal atmosphere. Among the flowering trees, Japanese plum, those heralds of spring, are so popular that they have a special term for their cultivation. And there are so many fans of the Azalea, that it is often cultivated exclusively by enthusiasts.

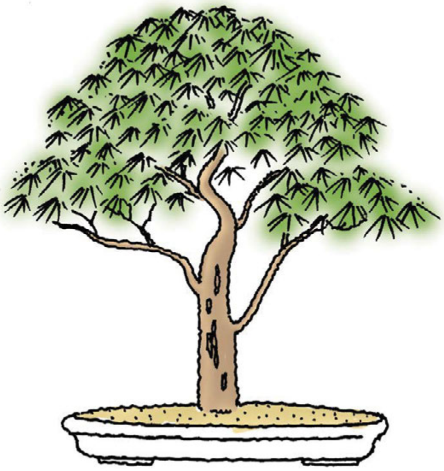
Although the flowers are the main attraction of these trees, it is also important to pay attention to the trunk and roots of flowering bonsai. As with other bonsai, post-transplantation pruning and bud treatment is an integral part of the work. Plum, cherry, azalea, camellia, etc. each have their own outstanding features.

FRUITING TREES

The trees that are most suitable for viewing during their fruiting season are classified as fruiting trees.

Trees that bloom and bear fruit have a particular loveliness about them. The fruit that remains on the branches after the leaves have fallen can be viewed as a symbol of life. Most fruiting trees bear fruit from autumn to winter, but some fruiting trees such as *Elaeagnus* (aka silverberry or oleaster) bear fruit in the spring and summer. Relatively small fruit is most suitable for bonsai. Popular tree species include *Ilex serrata* (Japanese winterberry) with lots of small red berries, persimmon, and quince with its pleasant scent. Others include gardenia and pyracantha. Pairing the tree's pot with the color of the fruit increases the attractiveness of the decor.

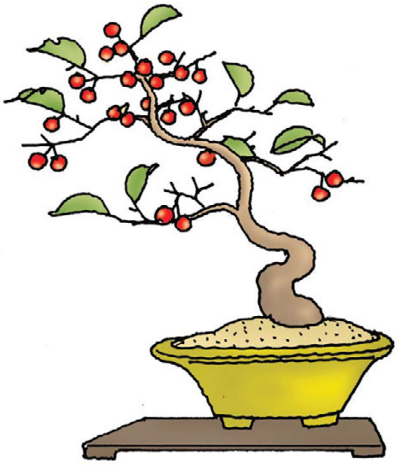




FOLIAGE TREES

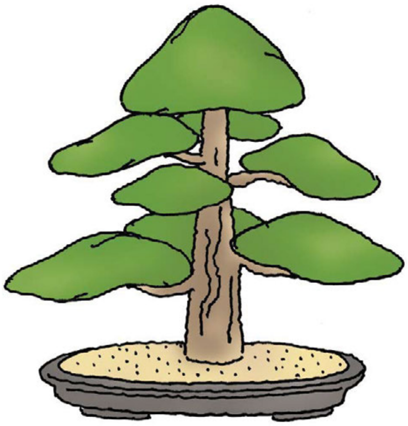
Foliage trees put the focus on the changing expressions of the seasons. Trees with broad leaves as their primary viewing feature are classified as foliage trees. Most of them have leaves that fall in the autumn or early winter, but some of them are evergreen, such as Asiatic jasmine. With foliage trees, you can enjoy spectacular seasonal transformations: the splendor of spring, fresh greenery in early summer, the defoliation of the leaves in fall, and the appearance of a winter tree with only a trunk and branches left behind by the fallen leaves. There are also many highlights, such as leaf color, exquisite branching, and finely textured bark. These trees are generally recommended for beginners because they are strong, easy to grow and a variety of tree shapes can be achieved. Japanese maple, beech, Japanese zelkova, etc. are representative of this classification.

Basic Tree Forms



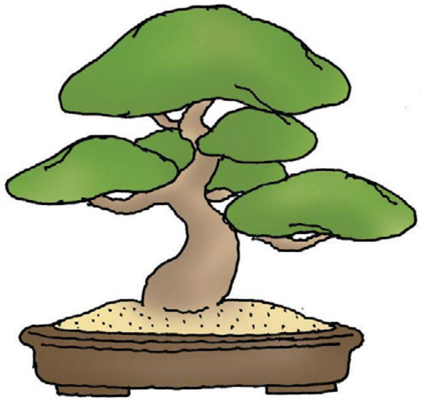
Slanted Trunk

The trunk grows diagonally to one side or the other. The branches do not grow in any particular direction, and there is not much organization in this type. It is most commonly found in growing in the wild.



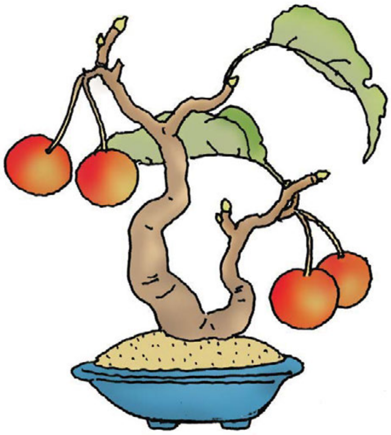
Upright Trunk

The trunk grows straight toward the sky, the roots grow in all directions, and the symmetrical triangular shape is ideal for this type. It is the most basic form for bonsai. However, it requires a lot of experience to execute.



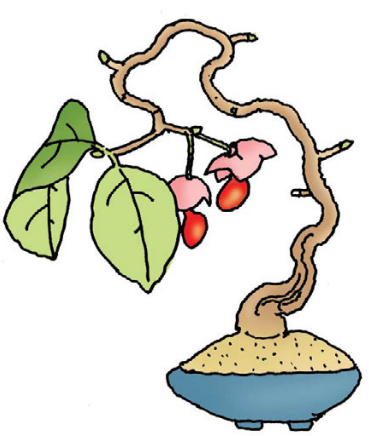
Pattern Tree

The expression "drawing a pattern" means the bending back and forth of the trunk and branches. The form is ideal if it undulates gently. The curvaceous shape is the most common form of bonsai.



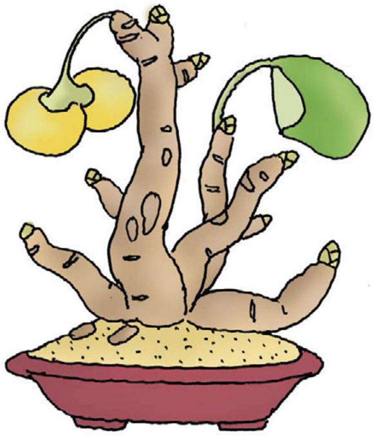
Twin Trunk

This is a tree form in which two trunks spread from the same root. The taller, thicker trunk is the main trunk, whereas the thinner, shorter trunk is the secondary trunk. Some give them the nicknames of "parent" and "child."



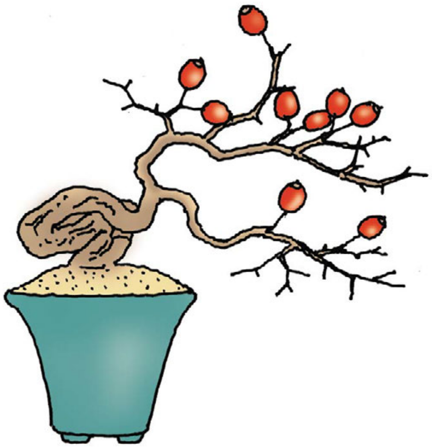
Literati Tree

The thin trunk stretches out in the absence of lower branches, and the whole tree creates a delicate silhouette. It was named for its popularity among authors in the Edo period.



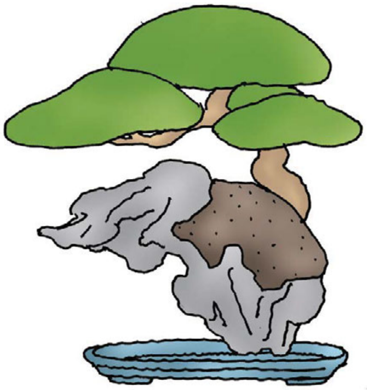
Standing Trunk

This form exhibits several trunks extending from one root. The appeal is the harmony between the height and thickness of the main trunk and other trunks. The number of trunks is typically an odd number, such as three trunks, five trunks or seven trunks.



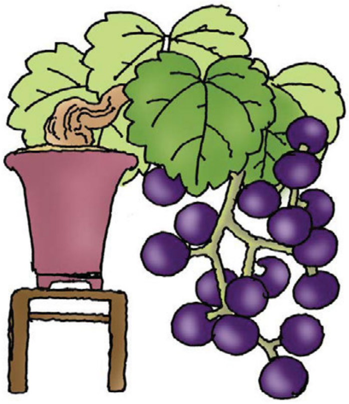
Windsock

This is a tree with a shape that makes it appear to have been exposed to high winds in mountainous or seaside regions and stretches in one direction from the trunk to the branches. Common to harsh environments in nature, conifers are the most suitable for this tree shape.



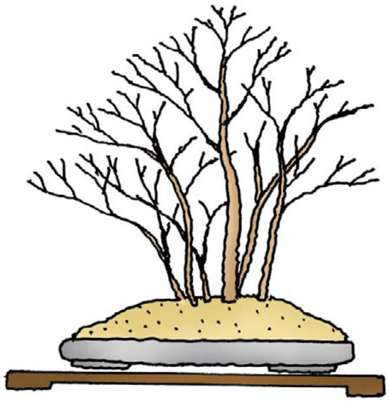
Root Over Rock

Similar to group planting (see right), this form mimics a natural landscape and is an ancient form of bonsai. It represents the character of a tree that lives on the cliffs of mountainous regions or on the rocks along a shoreline.



Cliff

This is a tree form that expresses a powerful stance, symbolizing persistence in the face of adversity. Those with trunks and branches hanging below the bottom of the bowl are called “overhanging cliffs,” and those that do not fall below the bottom of the bowl are called “half-hanging cliffs.”



Group Planting

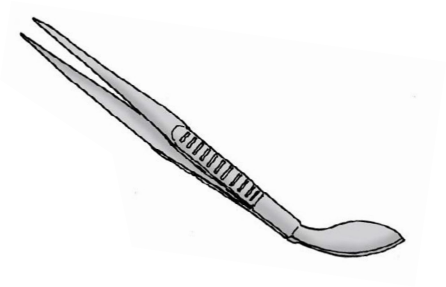
Multiple roots of the same type planted in a single pot to form a group that looks like a forest. Although not covered in this book, there are several types of herbaceous bonsai that are grown in this arrangement.

THE FIRST STEP TO BEGINNING BONSAI

Tools to Have on Hand

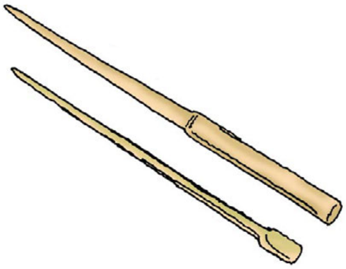
You can purchase these items at bonsai nurseries, garden shops and home centers, as well as online stores. Some items can be substituted with general gardening and household tools.

Basic Tools and Materials



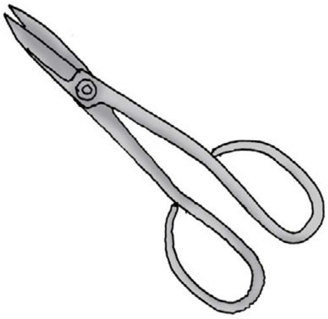
Bonsai Tweezers

For bud-picking, bud-nipping, foliage trimming, weeding, etc. The curved blade on the back end is used for leveling the soil.



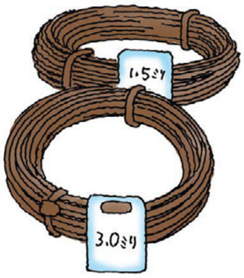
Bamboo Chopsticks

Use chopsticks to loosen toughened root clumps when planting and replanting, and to tamp soil into gaps between the roots.



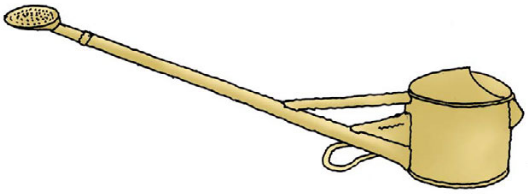
Pruning Scissors

Used for pruning fine branches and leaves. Because this tool has fine blade edges that are prone to blunting, do not use it for cutting roots. Use a root cutter instead (see facing page).



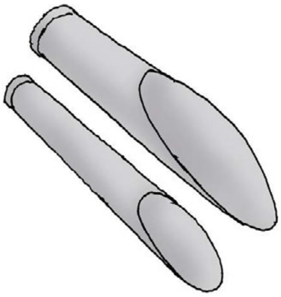
Wire

In addition to bending trunks and branches, wire is used to anchor the net and roots at the bottom of the pot. For gardening, 15 gauge (1.45 mm) and 9 gauge (2.9 mm) wires are best.



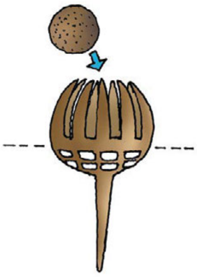
Watering Pot

Copper products have an antimicrobial effect. Professional gardeners and veteran bonsai enthusiasts alike seek out tools made, or plated with, copper.



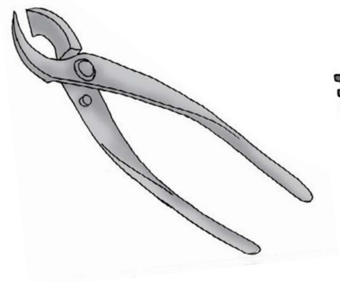
Soil Scoop

This tool is handy for distributing soil during planting and replanting. Use different sizes depending on the size of the pot being filled.



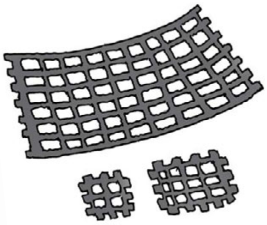
Fertilizer Basket

These plastic cages are used to anchor solid fertilizer to the pot soil. They also have the effect of preventing insect and bird feeding damage.



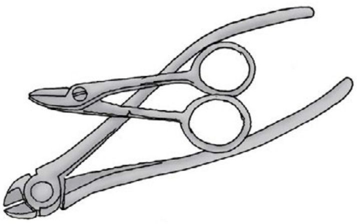
Branch Cutter

This robust tool will make short work of cleanly cutting the trunks, thick branches and roots.



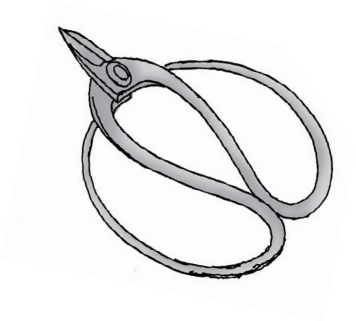
Pot Netting

Prevents soil from spilling out of the bottom of the bowl, and also blocks entry for insects. Cut squares according to the size of the hole being covered.



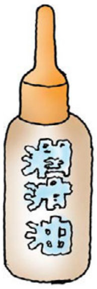
Wire Cutter

An indispensable tool for preparing wire for anchors and for training branches and trunks. Cutters are also useful when the wires need to be removed.



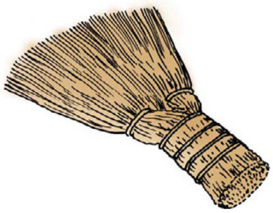
Root Cutter

Root cutters are used to trim roots during replanting. They can also be used to cut thick branches.



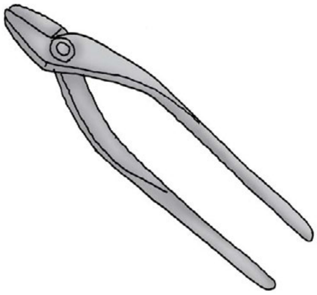
Scissor Oil

This light oil keeps scissors sharp and rust free. Wash them after use, dry, and then apply lubricant each time.



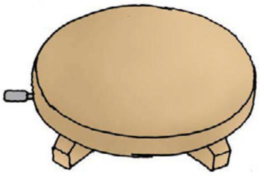
Brush

When working with soil, a small brush is convenient for cleaning up messes.



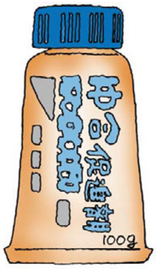
Pliers

Pliers are used when twisting the wire that holds the roots or when removing wires installed when replanting.



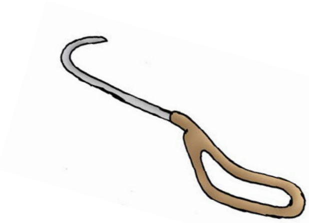
Turntable

This platform rotates 360 degrees, allowing you to see the tree from all directions without having to change positions.



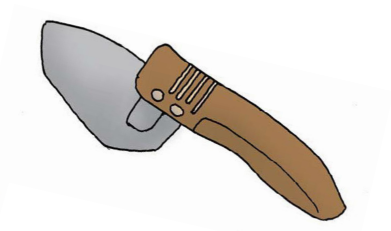
Wound Dressing

This preparation is used to prevent microbes from entering wounds and grafts and to facilitate healing when branches are pruned.



Root Pick

A useful tool for removing hardened roots during replanting.



Soil Tamper

For use when replanting; this tool is used for flattening the soil in a pot containing a large area of topsoil before watering.

How Bonsai Use Air and Soil

PLANTS CONSUME NUTRIENTS AND BREATHE

Animals, including humans, take in nutrition essential for replenishing their bodies. Some of the nutrients are carbohydrates, which are refined into glucose through digestion. Glucose is then used as fuel to power daily activities. Plants use water and sunlight to produce their own glucose for growth and repair.

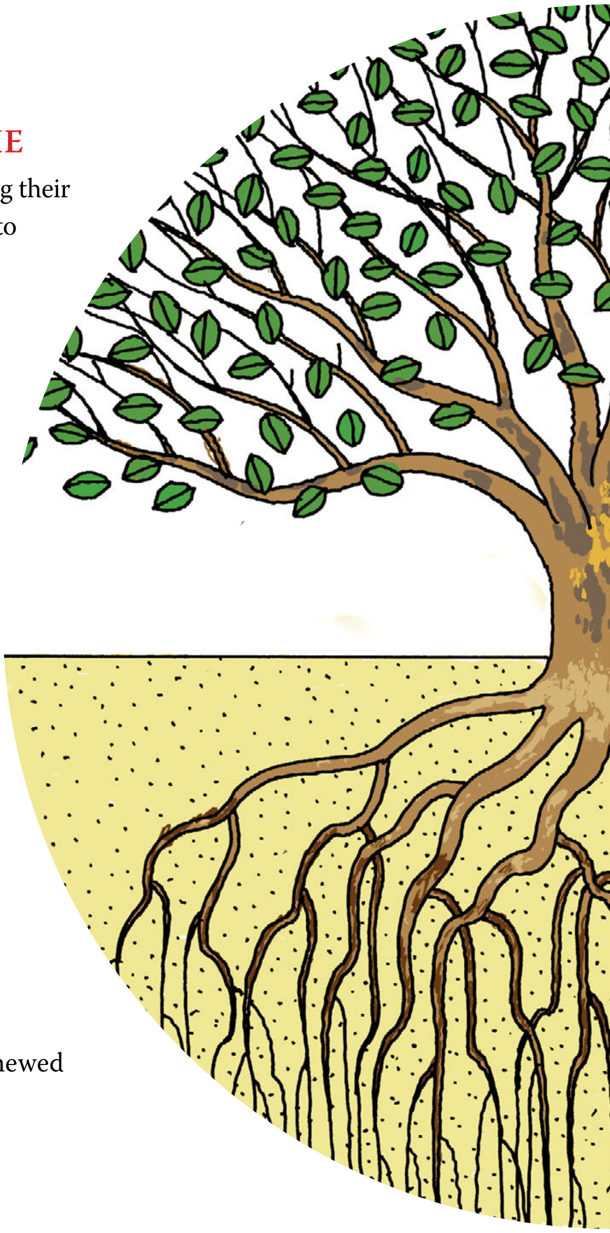
Respiration is another essential activity for terrestrial organisms. Oxygen-rich air enters the lungs, and the byproduct, carbon dioxide, is expelled. Plants do not have lungs, of course, but they also participate in respiration, exchanging oxygen for carbon dioxide.

Unlike the way animals metabolize food, plants can make the nutrients they need to sustain their lives. The process is called *photosynthesis*, and it takes place in the chloroplasts, which are located in the leaves. This is why plants are called "autotrophic organisms," whereas animals are called "heterotrophic organisms."

The quality of the soil is very important for optimal bonsai growth. Plant growth above the soil is determined by the plant's root growth below the soil. And root growth depends on the quality of the soil the roots occupy. Tree growth in the wild and bonsai growth both operate on the same principle.

But what conditions are necessary for roots to grow vigorously? Let's compare the conditions for trees in the wild and for bonsai.

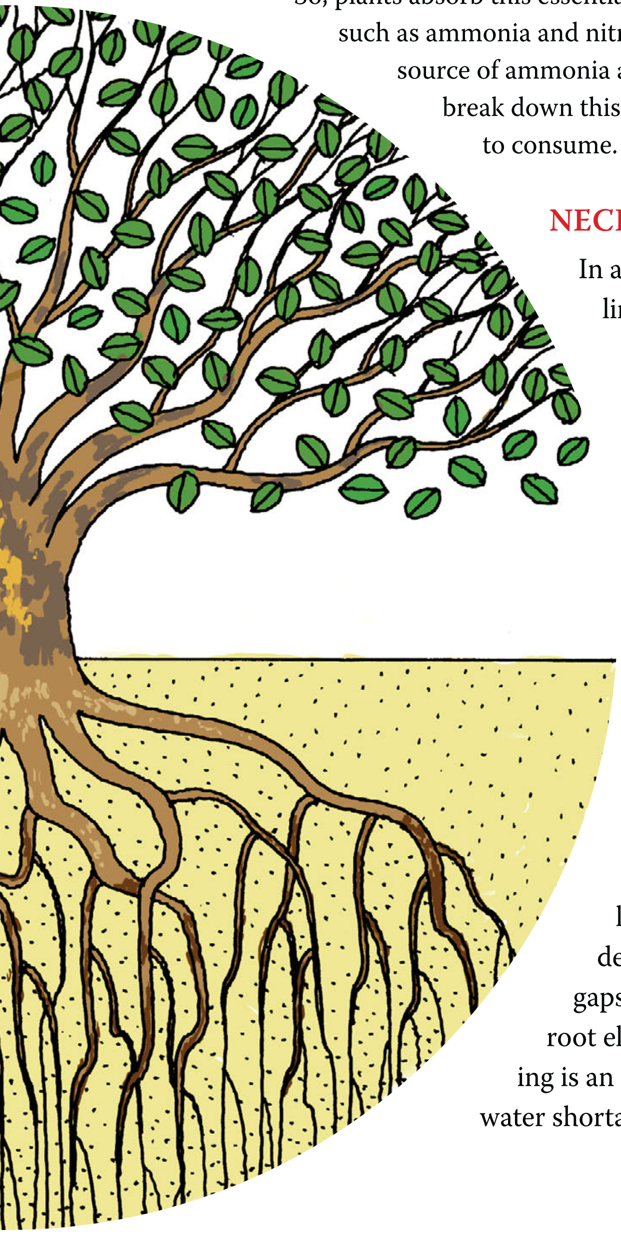
Natural trees are not replanted, but bonsai must be replanted at regular intervals. This is because outdoor soil is constantly being renewed



naturally throughout the seasons, whereas the condition of bonsai pot soil gradually deteriorates without renewal.

In the case of natural trees, organic matter (compost), which is the nutrient source for plants, is constantly being supplied by fallen leaves, branches, fallen trees, dead roots, animal excrement and carcasses, and the dead bodies of microorganisms. Nitrogen is indispensable for protein synthesis in plants. However, plants cannot directly take in the nitrogen gas that is abundant in the atmosphere.

So, plants absorb this essential gas through the roots in the form of nitrogen-rich compounds such as ammonia and nitrates. Organic substances such as fallen leaves are the primary source of ammonia and nitrates. Microorganisms that proliferate in the soil act to break down this organic matter into ammonia and nitrates that are easy for plants to consume.



NECESSARY AIR IN THE SOIL

In agriculture, fields are plowed in the spring before planting seedlings. This tilling actually serves the purpose of aerating the soil. It is also necessary for bonsai soil to be relatively loose for good aeration. Aerated soil is the ideal medium for water to be supplied to the roots through precipitation or watering, while at the same time excess water is easily drained away by gravity.

Plants take in carbon dioxide from the atmosphere only through the pores of their leaves, so no matter how loose the soil is, the roots do not absorb gases directly. However, part of the oxygen required for respiration is supplied by way of the element present in water absorbed by the roots.

WHY YOU NEED A GRANULAR SOIL

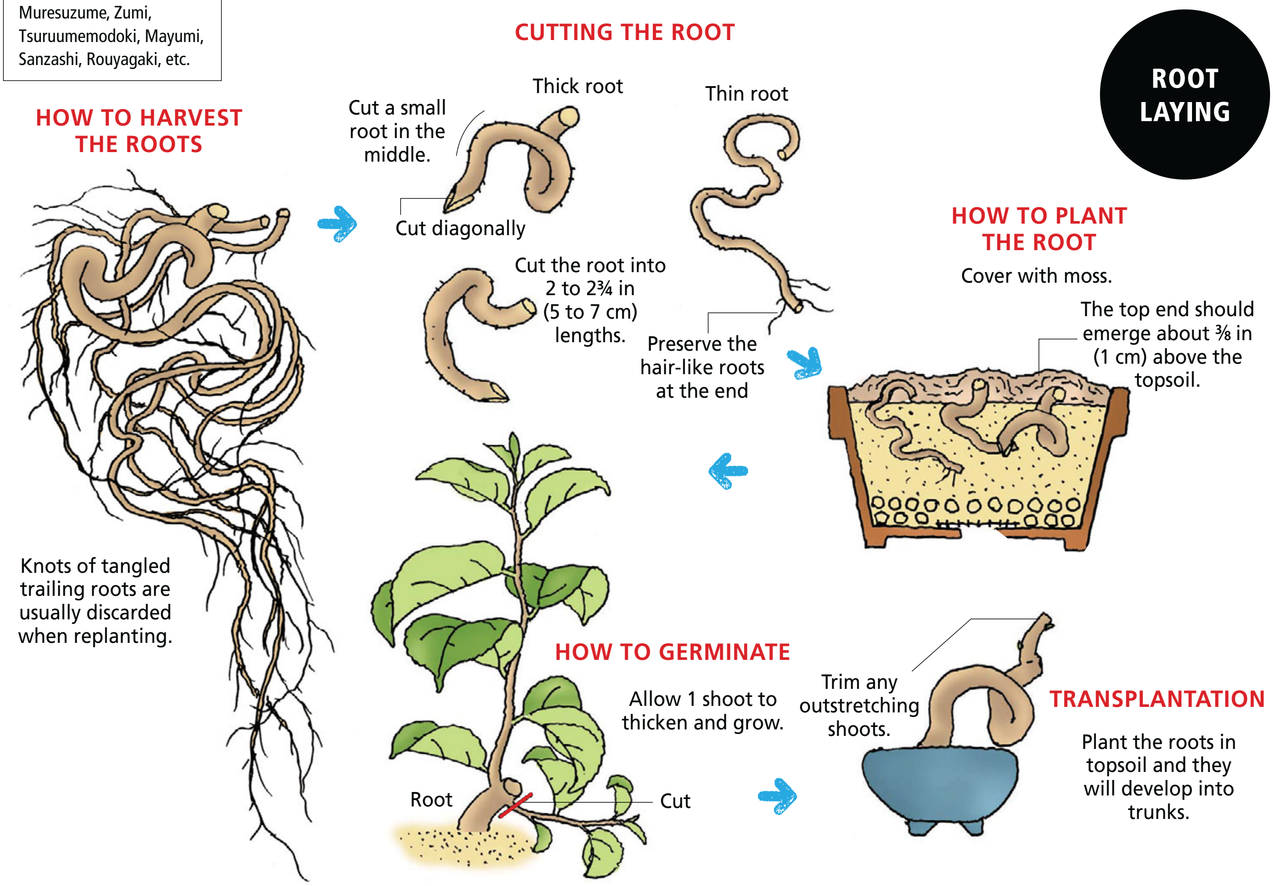
Bonsai soil should be granular. By using a granular soil, the naturally looser mix will facilitate the passage of water and nutrients to the roots. This kind of soil is called "granular structure soil." However, the quality of such soil gradually degrades as it compacts when smaller particles accumulate in the gaps between larger particles due to rainfall, daily irrigation, and root elongation. Replanting is how you reinvigorate the soil. Replanting is an indispensable task for improving the growing medium. Air and water shortages are likely to occur if it is neglected.

PROPAGATE AND TAILOR YOUR OWN TREES

Techniques & Supplemental Materials

**Bonsai trees grow from branch and roots cuttings.
Let's take a look at how these materials grow.**

[EXAMPLES] Choujubai, Doudantsutsuji, Noibara, Muresuzume, Zumi, Tsuruumemodoki, Mayumi, Sanzashi, Rouyagaki, etc.


ROOT LAYING
HOW TO HARVEST THE ROOTS
Knots of tangled trailing roots are usually discarded when replanting.
CUTTING THE ROOT
Cut a small root in the middle.
Thick root
Thin root
Cut diagonally
Cut the root into 2 to 2¾ in (5 to 7 cm) lengths.
Preserve the hair-like roots at the end
HOW TO PLANT THE ROOT
Cover with moss.
The top end should emerge about ⅜ in (1 cm) above the topsoil.
HOW TO GERMINATE
Allow 1 shoot to thicken and grow.
Root
Cut
Trim any outstretching shoots.
TRANSPLANTATION
Plant the roots in topsoil and they will develop into trunks.

VARIOUS BREEDING METHODS TO PROPAGATE BONSAI FROM SCRATCH

Bonsai enthusiasts enjoy the routine of maintaining their trees. Many bonsai tree species can be easily grown by cutting or starting from a seedling, so you can grow your own bonsai without spending any money!

"Root laying" is when you insert into soil reserved roots or branches that were cut during replanting and pruning. Most tree species will root and germinate with a high success rate, producing a new first year bonsai tree. In particular, root laying uses roots that are bent and curved from the outset, so it is easy to obtain good materials with bent "feet."

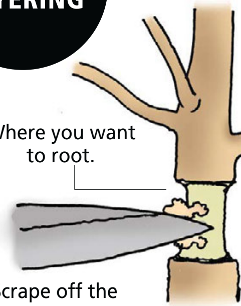
Seedlings that have been sprouted from seeds in the soil are also excellent bonsai materials. That ebullient feeling you get when the bud first appears is unique to this method of propagation.

"Air-layering" is done after rooting from the part of the trunk or branch that has a good bend. Instead of having to spend years training in the curves, the feet will be thick and well-bent already when harvested. This is the best way to make a powerful tree without the long wait.

AIR LAYERING

HOW TO CUT

(June to July)

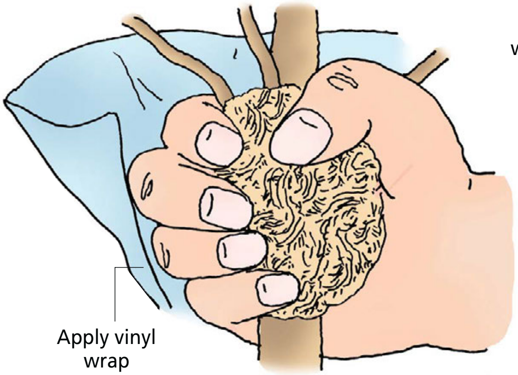


Where you want to root.

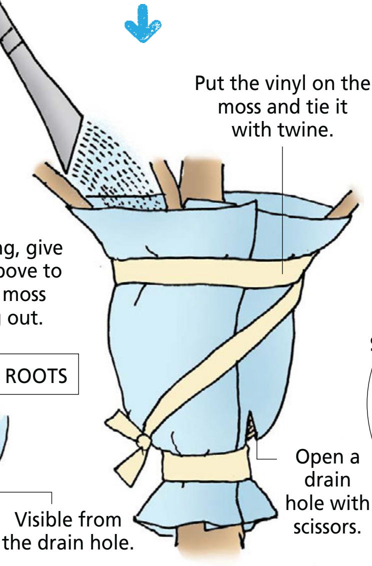
Peel about 1.5 times the diameter in a ring.

Scrape off the cambium with the back of the knife.

Lightly squeeze a clump of moss soaked in water and apply it to the peeled area.



Apply vinyl wrap immediately.



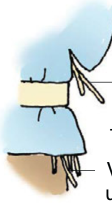
Put the vinyl on the moss and tie it with twine.

When watering, give water from above to prevent the moss from drying out.

Open a drain hole with scissors.

Tie the lower side tightly.

CHECKING FOR ROOTS

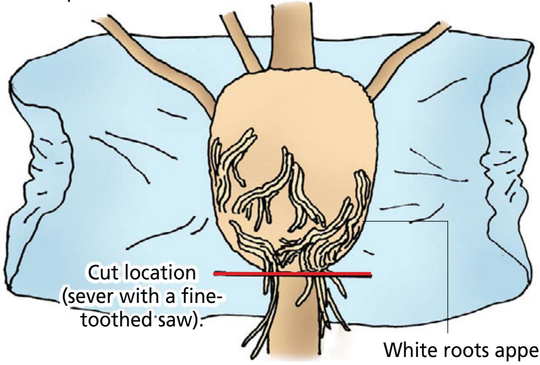


Visible from the drain hole.

Visible from underneath.

ROOTING AND REMOVAL

(After 2 to 3 months)

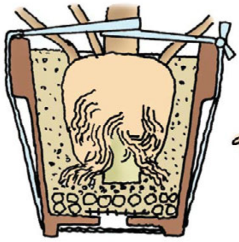


The vinyl has been opened.

Cut location (sever with a fine-toothed saw).

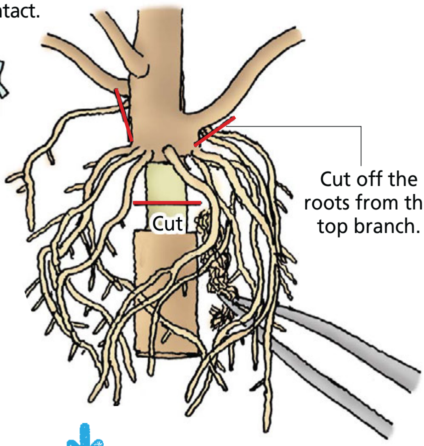
White roots appear above the moss.

If you're inexperienced with dealing with roots, plant with the moss intact.



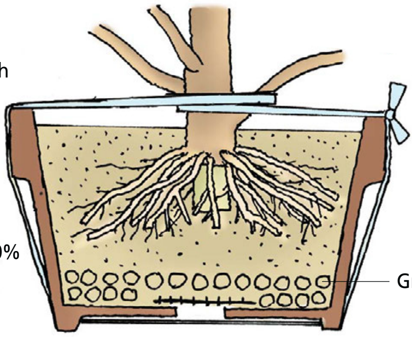
Remove the moss in the spring of the following year, when you replant the tree.

Where the moss is removed.



Cut off the roots from the top branch.

HOW TO PLANT



Secure with twine.

Gravel

Soil Composition

Akadamatsuchi red ball earth 70%

Kiryusuna river sand 30%

[EXAMPLES] Sarusuberi, Keyaki, Cherimenkazura, Himeshara, Buna, Momiji, Ichou, Kangumi, Kuchinashi, Zakuro, Tsuruume-modoki, Pirakansa, Mayumi, Sanzashi, Megi, Rouyagaki, Kuromatsu, Shinpaku, Toshou, Sugi, etc.

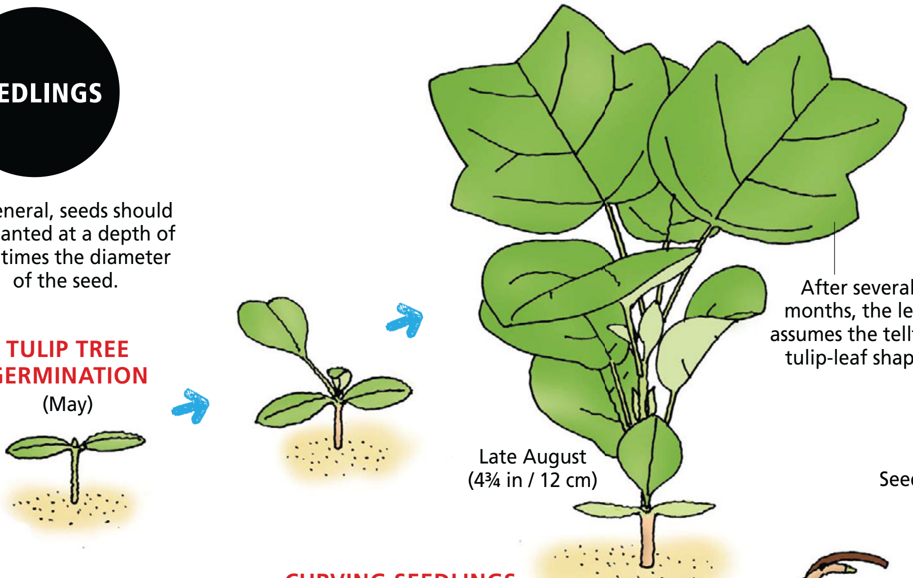
SEEDLINGS

In general, seeds should be planted at a depth of two times the diameter of the seed.

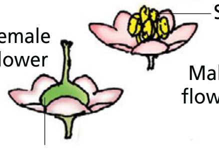
[EXAMPLES] Seedling germination is possible with most plants, but the success rate varies between species.

TULIP TREE GERMINATION

(May)

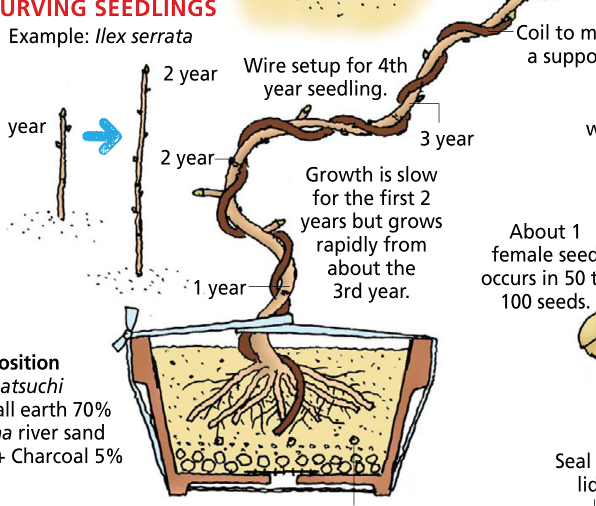

Late August
(4¾ in / 12 cm)
After several months, the leaf assumes the telltale tulip-leaf shape.

FLOWER SHAPE


Stamen
Female flower
Male flower
There is a large pistil.

CURVING SEEDLINGS

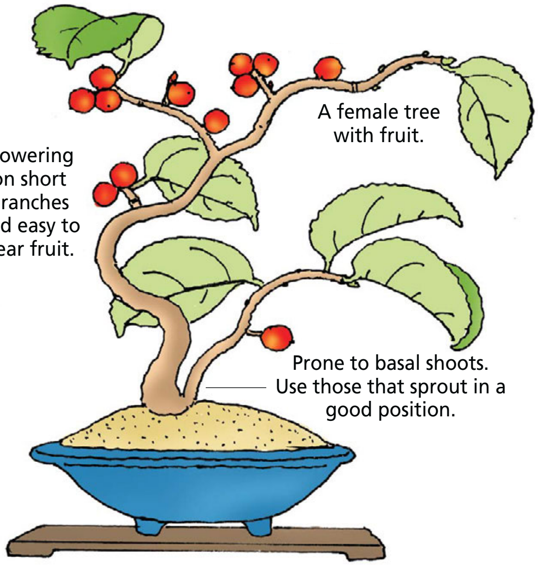
Example: *Ilex serrata*


1 year
2 year
2 year
Wire setup for 4th year seedling.
Coil to make a support.
3 year
Growth is slow for the first 2 years but grows rapidly from about the 3rd year.
1 year
Small amount of original fertilizer

Soil composition
Akadamatsuchi red ball earth 70%
Kiryusuna river sand 30% + Charcoal 5%

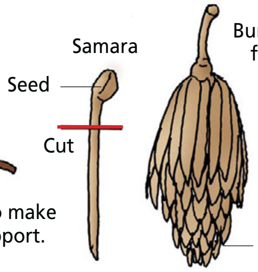
THE STATE OF A YEAR-6 SEEDLING

(Autumn)


Flowering on short branches and easy to bear fruit.
A female tree with fruit.
Prone to basal shoots. Use those that sprout in a good position.

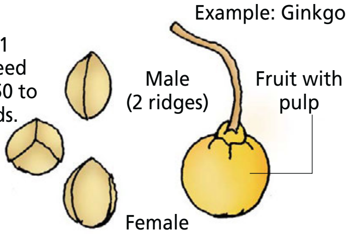
SEED COLLECTION AND STORAGE

Dry seeds
Example: Tulip tree

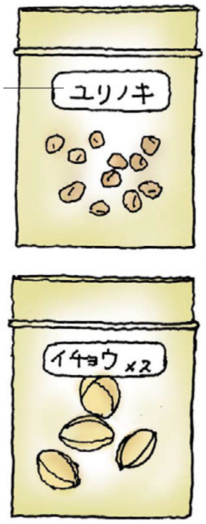

Samara
Bundled fruit
Seed
Cut
Dried fruit

Wash the seeds well, and dry them.

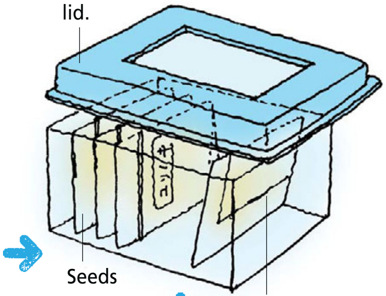
Wet seeds
Example: Ginkgo

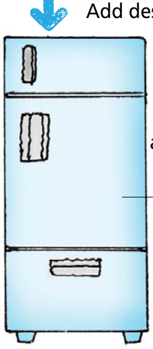

Male
(2 ridges)
Fruit with pulp
Female
(3 ridges)

About 1 female seed occurs in 50 to 100 seeds.


Name tag
ユリノキ
イチョウ メス

Sealed vinyl envelope


Seal the lid.
ユリノキ
Seeds
Add desiccant.

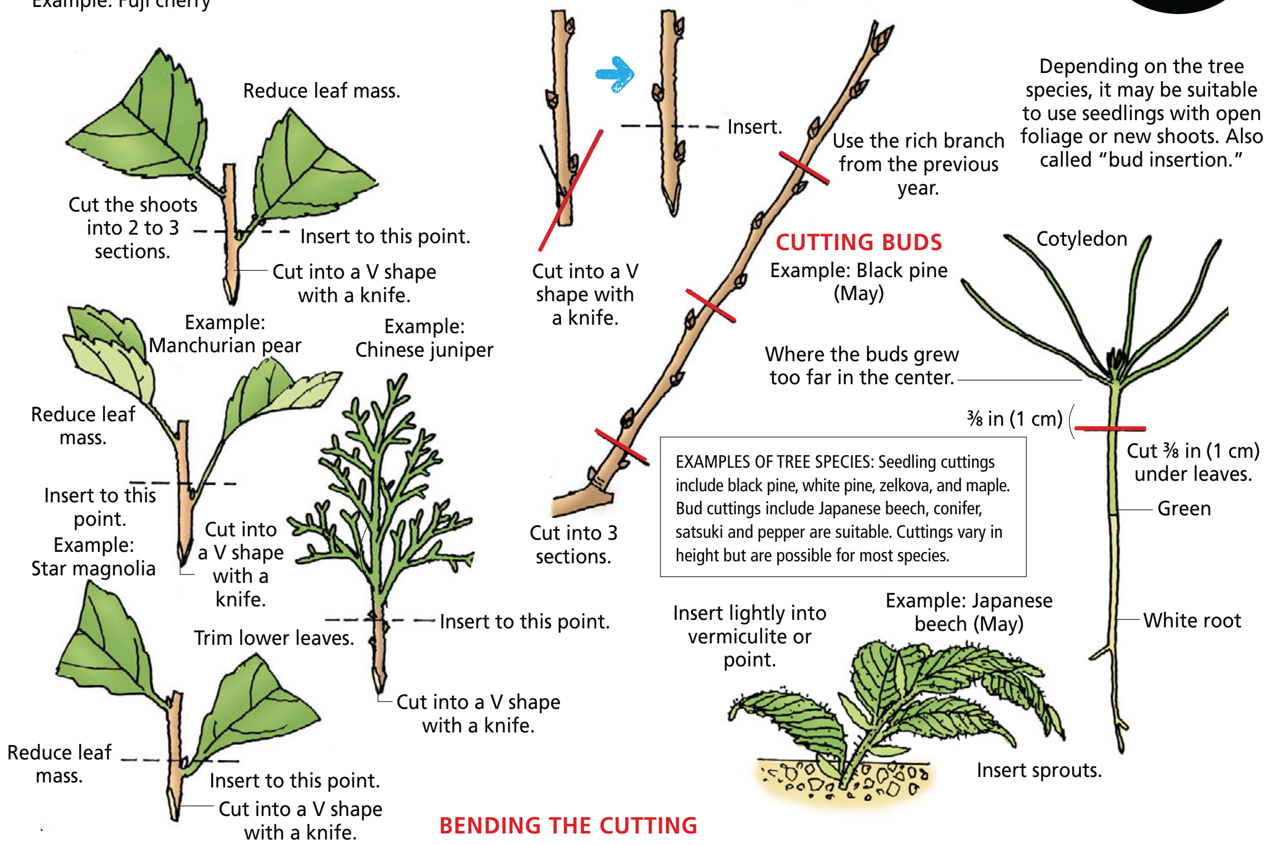

Store at around 41°F (5°C).
Do not put in the freezer.

Store in the refrigerator until spring.

Because the flowers start to grow 4 to 5 years after seedlings, confirm the sex. The fruit is mated with a male tree nearby.

TREE CUTTINGS

This method can be used for most tree species by inserting it when the new treetops grown from spring are full.


Cutting in rainy season
Example: Fuji cherry
Reduce leaf mass.
Cut the shoots into 2 to 3 sections.
Insert to this point.
Cut into a V shape with a knife.
Example: Manchurian pear
Reduce leaf mass.
Insert to this point.
Cut into a V shape with a knife.
Example: Star magnolia
Reduce leaf mass.
Insert to this point.
Cut into a V shape with a knife.
Example: Chinese juniper
Trim lower leaves.
Insert to this point.
Cut into a V shape with a knife.
Cutting in spring
Example:
Korean juneberry
Insert.
Cut into a V shape with a knife.
Use the rich branch from the previous year.
Cut into 3 sections.
Cotyledon
Where the buds grew too far in the center.
⅜ in (1 cm)
Cut ⅜ in (1 cm) under leaves.
Green
White root
Example: Japanese beech (May)
Insert lightly into vermiculite or point.
Insert sprouts.

CUTTING BUDS

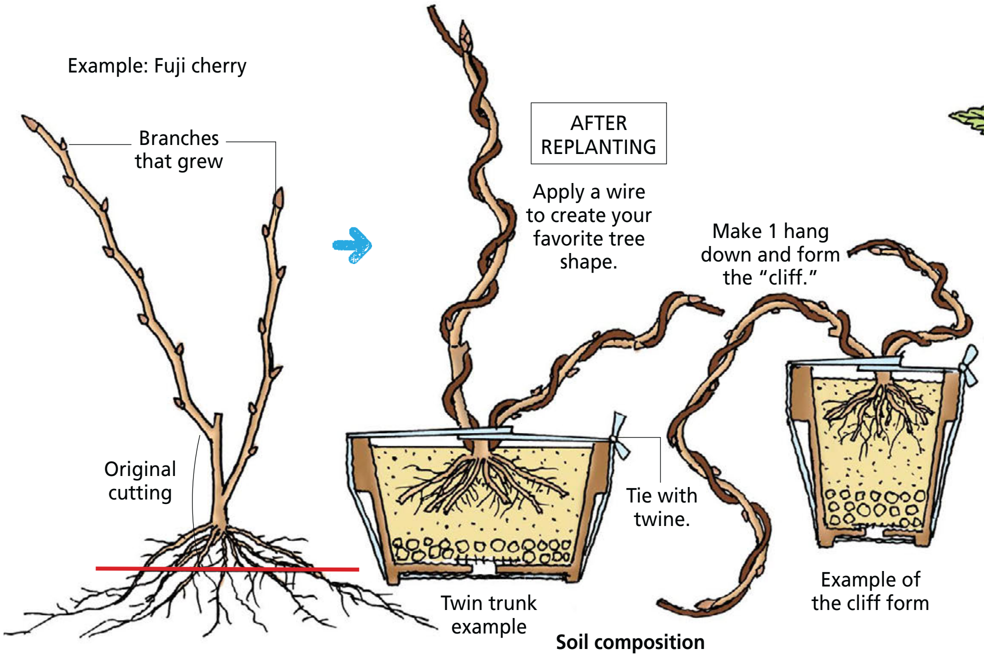
Example: Black pine (May)

Depending on the tree species, it may be suitable to use seedlings with open foliage or new shoots. Also called "bud insertion."

EXAMPLES OF TREE SPECIES: Seedling cuttings include black pine, white pine, zelkova, and maple. Bud cuttings include Japanese beech, conifer, satsuki and pepper are suitable. Cuttings vary in height but are possible for most species.

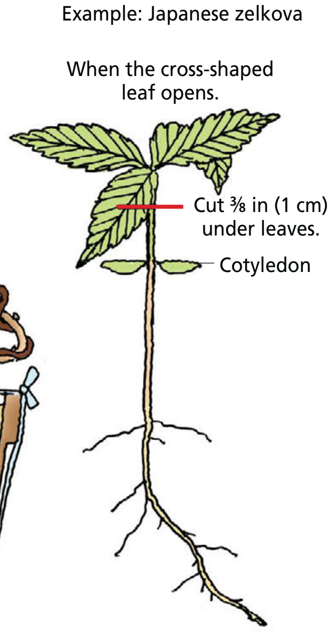
BENDING THE CUTTING

(After 1 to 2 years)

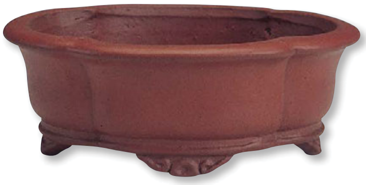

Example: Fuji cherry
Branches that grew
Original cutting
Cut long roots.
AFTER REPLANTING
Apply a wire to create your favorite tree shape.
Make 1 hang down and form the "cliff."
Tie with twine.
Twin trunk example
Example of the cliff form

Soil composition

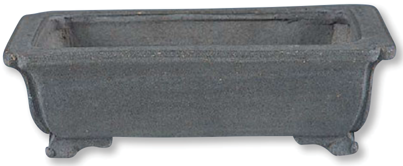
Akadamatsuchi red ball earth 70%
Kiryusuna river sand 30%


Example: Japanese zelkova
When the cross-shaped leaf opens.
Cut ⅜ in (1 cm) under leaves.
Cotyledon

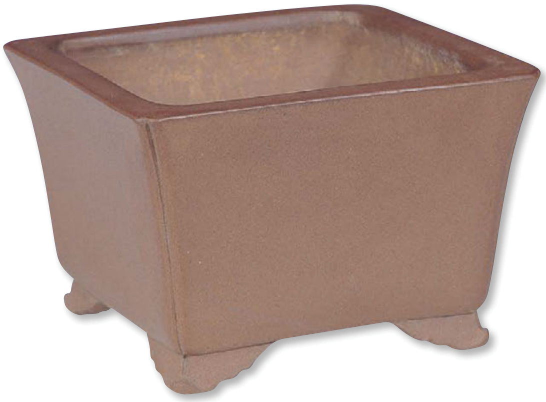
Types of Bonsai Pots



Mud pot Red quince-style bowl—
5 × 4 × 2 in (12.6 × 10.2 × 4.9 cm)

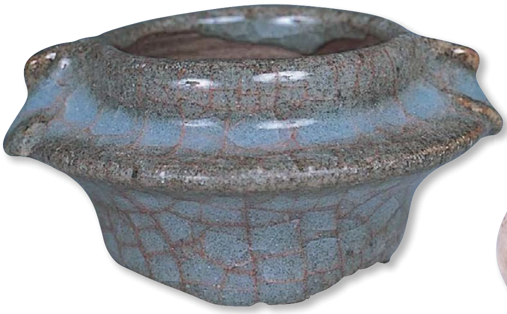


Mud pot Rectangle cloud-foot pot—
6 × 4⅞ × 2¾ in (15 × 12.4 × 4.5 cm)

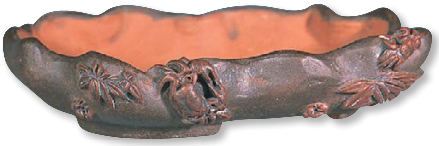


Mud pot Square cloud-foot pot—
3½ × 3½ × 2⅜ in (9 × 9 × 6 cm)

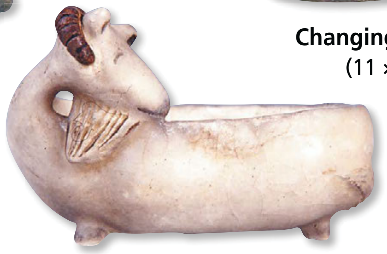
Containers for bonsai come in various shapes and colors. If you start to worry about how the pot pairs with your plants, then you must be a bonsai enthusiast!



Changing pot
1½ × 1⅛ in (3.8 × 3 cm)



Changing pot 4⅜ x 3 x ⅞ in
(11 × 7.5 × 2.3 cm)



Changing pot 3¾ × 2⅜ × 2⅜ in
(9.5 × 6 × 6.1 cm)

A FUN WORLD OF SMALL POTS THAT BRING OUT THE CHARM OF TREES

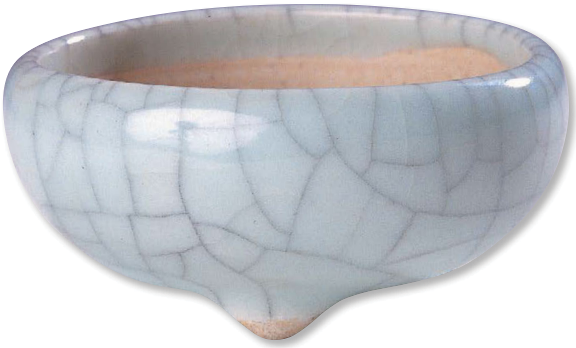
What bonsai is to a person, the pot is to clothes. A tree becomes a bonsai only after planting in a bonsai pot. Furthermore, you create "good bonsai" by pairing pots with trees that complement each other. Bonsai is fascinating with its variety of expressions even if it is very small. But it's the pot that brings out the charm.

Small pots and bowls are classified as either "mud" or "glazed," as is the case with ordinary bonsai pots. In general, mud pots are used for conifers, and glazed bowls are used for other miscellaneous trees.

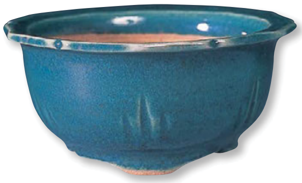
Mud pots are baked without glaze on the clay. They are also called baked pots." Glazed pots come in a variety of colors and designs. Just looking at the colorful glazed pots is already interesting, to say nothing of the bonsai!

Because the pots are small, it is easy to experiment with different sorts, as the shape of the containers vary. There are many "changing pots" that are unusual when compared to a conventional bonsai pot.

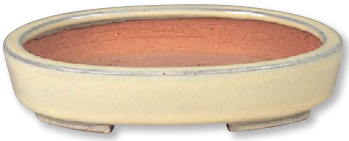
A bonsai connoisseur might mention that the pot looks good on the tree by saying "the pot pairing looks good." If you start to worry about how the pot pairs with your plants, then you must be a bonsai enthusiast!



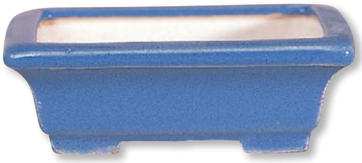
Glazed pot Porcelain round pot
3 × 1⅛ in (7.5 × 3 cm)



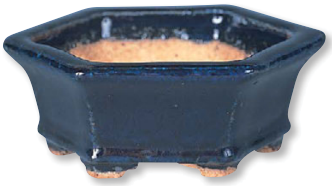
Glazed pot Flower-type pot
2¾ × 1½ in (7 × 4 cm)



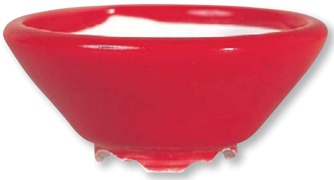
Glazed pot White vertical pot
5⅞ × 4½ × 1⅛ in (14.9 × 11.4 × 2.8 cm)



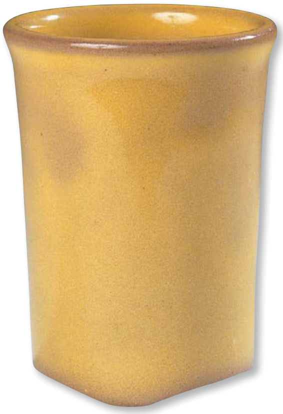
Glazed pot Long-type pot
3¼ × 2½ × 1 in (8.5 × 6.5 × 2.6 cm)



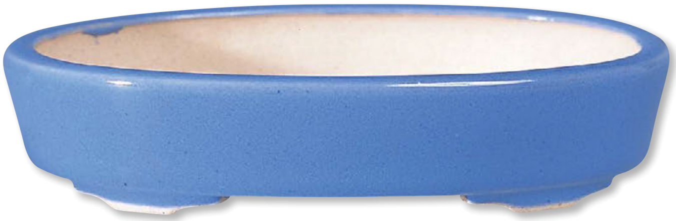
Glazed pot Hattori hexagon pot
3⅝ × 3⅛ × 1½ in (9.2 × 8.2 × 3.9 cm)



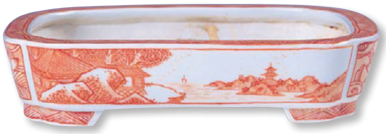
Glazed pot Chicken blood pot
2½ × 1⅛ in (6.5 × 3 cm)



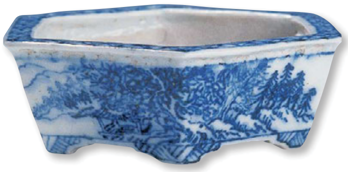
Glazed pot Yellow round pot
2 x 2¾ in (5 × 7 cm) base



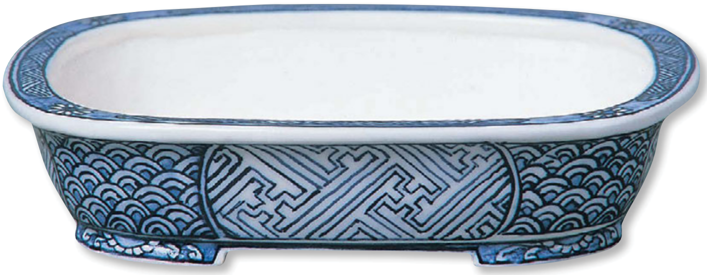
Glazed pot Elliptical
4¾ × 3⅜ × 1 in (12 × 8.7 × 2.5 cm)



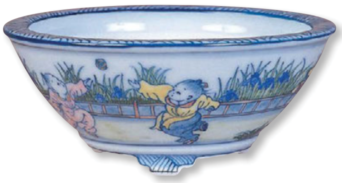
Glazed pot (painting) Long pot
5⅞ x 4⅝ x 1¼ in (14.9 × 11.7 × 3.2 cm)



Glazed pot (painting) Hexagonal
3⅛ x 3⅛ x 1⅛ in (8 x 8 x 2.8 cm)



Glazed pot (painting) Long pot
4⅛ x 3½ x 1 in (10.5 × 9 × 2.5 cm)

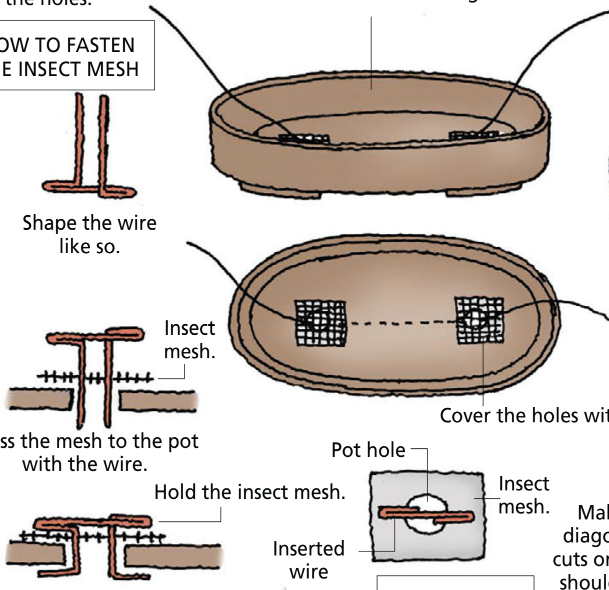


Glazed pot (painting) Round pot
5 x 2 in (12.5 × 5 cm)

Planting in a Bonsai Pot

PREPARING THE BONSAI POT

Choose a shallow bowl that makes the tree look large.



Thread the wire you'll use to anchor the plant through the holes.

Shape the wire like so.

Press the mesh to the pot with the wire.

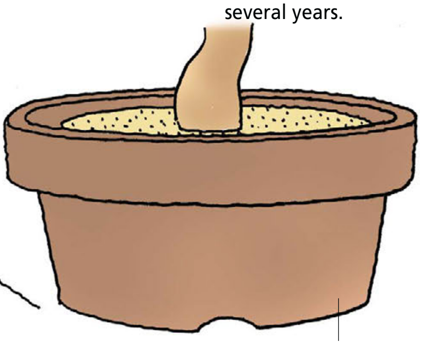
Hold the insect mesh.

Bend to secure.

Cover the holes with insect mesh.

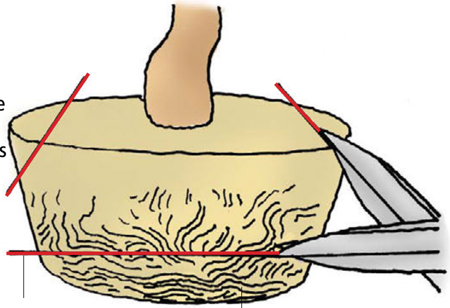
REPOTTING FROM A PREVIOUS POT TO A BONSAI POT

This tree has been planted in the pot for several years.



The roots often grow out of the pot.

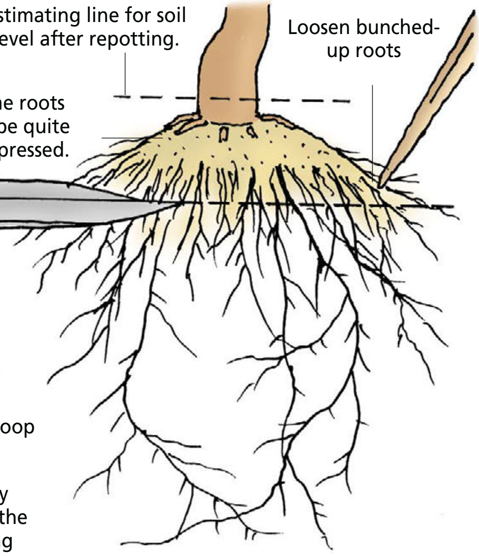
When removed from the bowl.



Make diagonal cuts on the shoulders of the mass removed from the pot.

Cut off about ⅜ in (1 cm) of the roots from the bottom.

The roots are compressed from the original pot.



Estimating line for soil level after repotting.

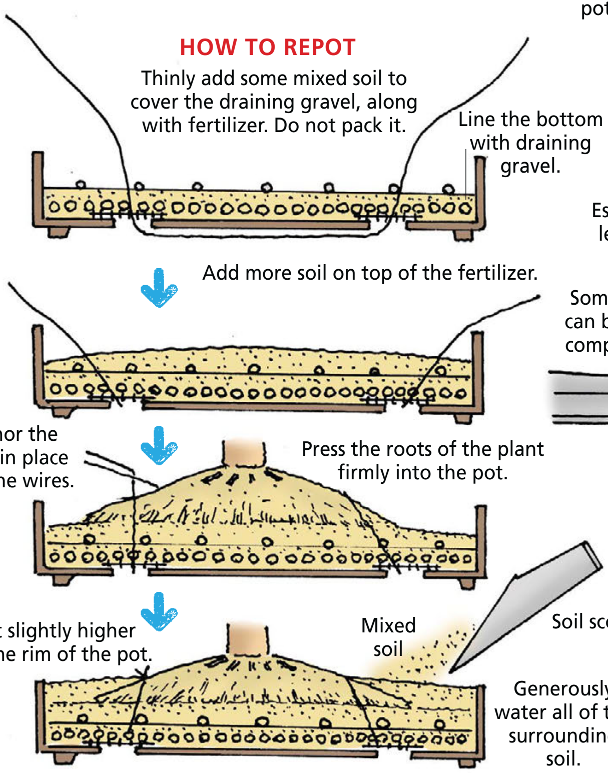
Loosen bunched-up roots

Some roots can be quite compressed.

Keep the roots in a clump and trim the lengthy ones short.

HOW TO REPOT

Thinly add some mixed soil to cover the draining gravel, along with fertilizer. Do not pack it.



Line the bottom with draining gravel.

Add more soil on top of the fertilizer.

Anchor the plant in place with the wires.

Press the roots of the plant firmly into the pot.

Plant slightly higher than the rim of the pot.

Generously water all of the surrounding soil.

MONTHLY BONSAI CARE CALENDER

Sharing Our Lives with Bonsai

Plants create impressions that change from day to day, which can help you feel more in tune with the turning seasons. This book is based on the climate in the Kanto region of Japan. Be sure to tailor the instructions to the unique climate of the area you live in.

January	Examples of arrangement and ornamentation (indoors) / Various types of shelters / Managing and nurturing bonsai in their shelters / Cleaning used pots for re-use / Tree type and watering / Pruning and wiring
February	Pruning small, leafy trees I / Pruning small, leafy trees II / Second winter disinfection / Replanting / Wiring and guy-wiring / Managing and nurturing bonsai in their shelters / Pruning and propagating with cuttings / Preparing coarser material / Preparing the right soil mix / Pruning during the dormant period / Grafting
March	Opening bonsai shelters / Replanting preparation / Preparing pots for planting / Planting guide / Replanting guide / Preparing a mound of soil / Types of soil mixes / Preparing the soil mix (sieving) / Example of soil formulation / Soil composition
April	Flowering trees: Flowering and care / Fruiting trees: Flowering and cross-pollination / Leafy trees: Pinching off shoots / Replanting / Watering / Responding to aphids / Flowering trees: Pinching off shoots after flowering / Protecting against late frost
May	Pinching off conifer shoots / Leafy trees: Pinching off shoots / Fruiting trees: Managing bonsai flowering seasons / Disinfecting with pesticide / Flowering trees: Flowering / Leafy trees: Second bud picking / Fruiting trees: Flowering / Controlling shoots / Adding fertilizer
June	Leafy trees: Leaf trimming / Air-layering / Cross-pollinating *Ilex serrata* / Trimming shoots on black pine / Flowering trees: Pruning after flowering, managing and nurturing bonsai during flowering / Managing and nurturing bonsai during extended poor weather
July	Preparing bactericide and pesticide spray / Shading / Pest control / Managing and nurturing bonsai during extended poor weather / Wiring long branches / Bud trimming for black pine / Replanting stem-cutting shoots
August	Care & trimming of conifers / Pinching off shoots / Leafy bonsai: Care & trimming / Flowering and fruiting bonsai: Care & trimming / Leaf trimming / Protecting against summertime dehydration / Replanting Japanese white pine I / Replanting Japanese white pine II / Watering the needles / Protecting against storms / Treating leaf burn / Summer watering
September	Replanting in autumn / Removing the shade from your bonsai / Autumn fertilizer / Responding to gall disease / Transplanting / Removing a new cutting from its layering assembly / Replanting flowering quince / Flowering bonsai: Treating long branches / Fruiting bonsai: Leaf burn and flower buds / Leafy bonsai: Pinching off buds / Conifers: Removing old leaves
October	Care & trimming of bonsai on display at an exhibition / How to decide which bonsai to purchase / Seed collecting / Preserving seeds / Neutralizing acidified soil / Ripened fruit: Gathering and preserving seeds / Adding extra fertilizer / Disinfecting / Wiring
November	Gathering and preserving seeds / Protecting your bonsai from birds / Gathering seeds from parks / Care & trimming / Removing old needles on conifers / Citrus tree bonsai shelters / Care & trimming when leaves have fallen
December	Pruning and wiring / Disinfecting in winter / Broadening conifer candles: Wiring / Preparing bonsai shelters for winter / Black pine needle removal / Bonsai as New Year's decorations / Leafy bonsai: Light pruning

HEALTHY GROWTH COMES FROM DAILY CONVERSATIONS

Starting a bonsai and watching your favorite tree grow little by little is a great pleasure. However, to what extent it grows will require specific, prescribed care throughout the year.

To enjoy bonsai, it is important to consider your lifestyle and to what extent you can follow the monthly bonsai care calendar presented on the following pages without the situation becoming overwhelming.

Similar to caring for pets such as dogs and cats, bonsai will not thrive unless they are raised with careful attention. Because plants cannot clamor audibly for attention, you must have a keen eye and pay close attention to what you observe. To love a bonsai brings with it unspoken “conversations” with the tree as you concern yourself with its health.

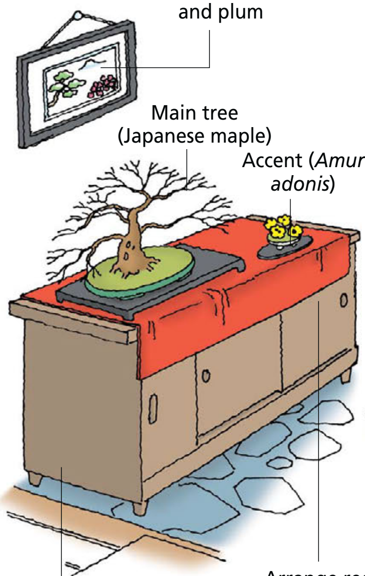
The phrase “completed form” is used when discussing bonsai, but there is no true end to our efforts toward creating the ideal form of a bonsai.

January

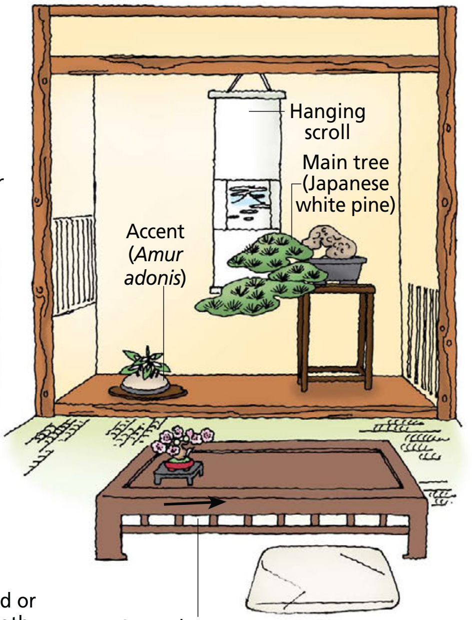
- ☑ Examples of arrangement and ornamentation (indoors)
- ☑ Various types of shelters
- ☑ Managing and nurturing bonsai in their shelters
- ☑ Cleaning used pots for re-use
- ☑ Tree type and watering
- ☑ Pruning and wiring

Examples of arrangement and ornamentation (indoors)

ENTRY HALL

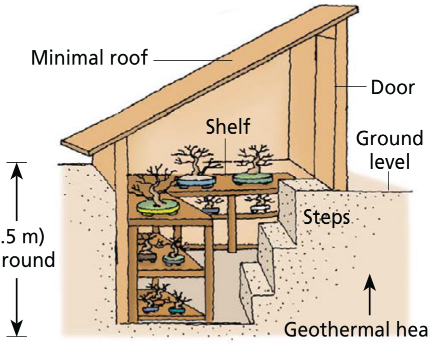

Picture of pine and plum
Main tree (Japanese maple)
Accent (*Amur adonis*)
Shoe cabinet or similar
Arrange red or blue felt cloth.

ALCOVE

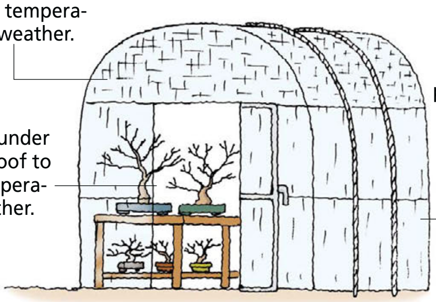

Hanging scroll
Main tree (Japanese white pine)
Accent (*Amur adonis*)
Secondary tree (Plum)

Various types of shelters

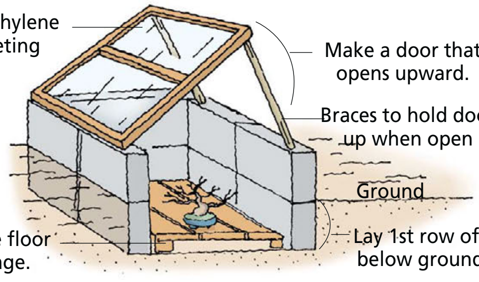
SEMI-BELOWGROUND BONSAI SHELTERS


Minimal roof
Door
Shelf
Ground level
Steps
5 ft (1.5 m) underground
Geothermal heat rises from the ground.

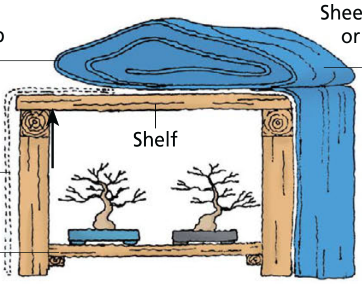
POLYTUNNELS


Hang cheesecloth under the polyethylene roof to prevent rising temperatures in hot weather.
Hang cheesecloth under the polyethylene roof to prevent rising temperatures in hot weather.
Surround the polytunnel with polyethylene to protect against cold wind and frost.

SMALL SEMI-BELOWGROUND SHELTERS FOR BONSAI

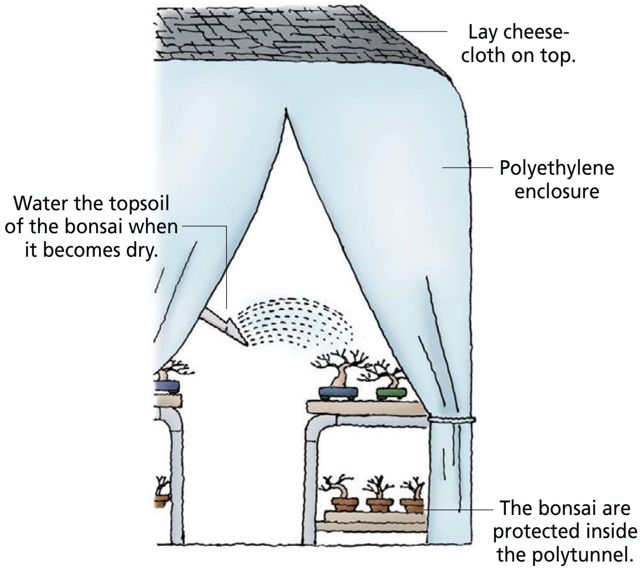

Polyethylene sheeting
Make a door that opens upward.
Braces to hold door up when open
Ground
Lay a simple floor for drainage.
Lay 1st row of blocks below ground level.

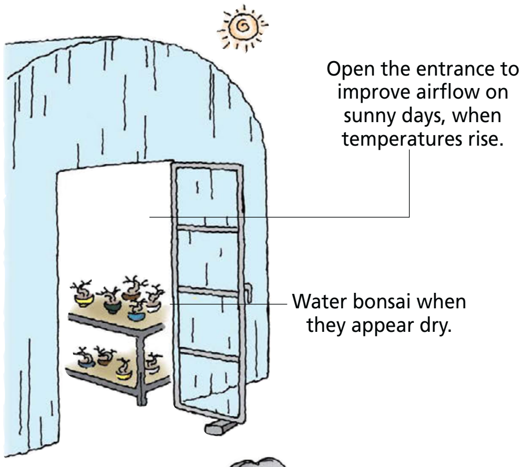
UNDER-SHELVES USED FOR BONSAI SHELTERS

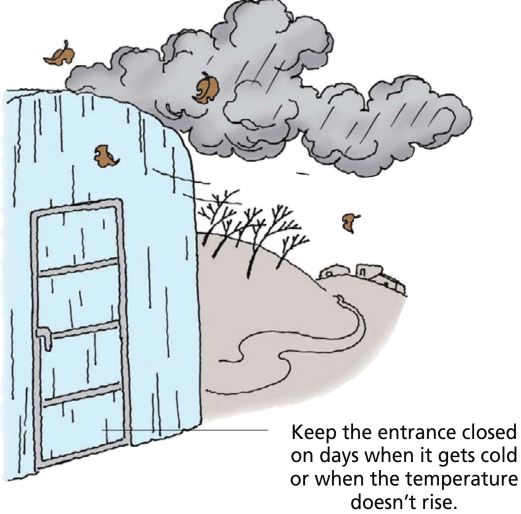

Sheet of cloth or similar
If temperatures drop too low, lay plastic under the cloth.
Shelf
At night, drape cloth over the rack to protect the bonsai.
Lower shelf

Managing and nurturing bonsai in their shelters

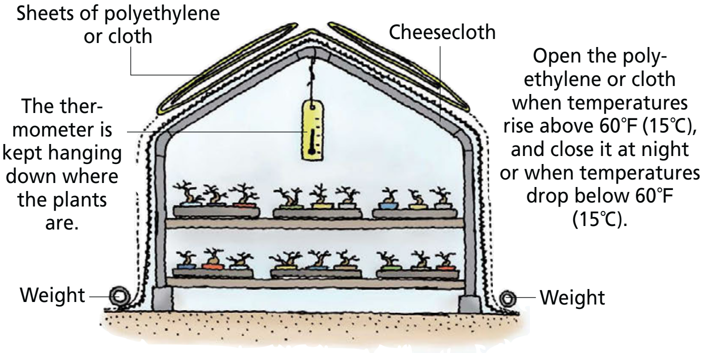
Example: Polytunnels


Lay cheese-cloth on top.
Polyethylene enclosure
Water the topsoil of the bonsai when it becomes dry.
The bonsai are protected inside the polytunnel.

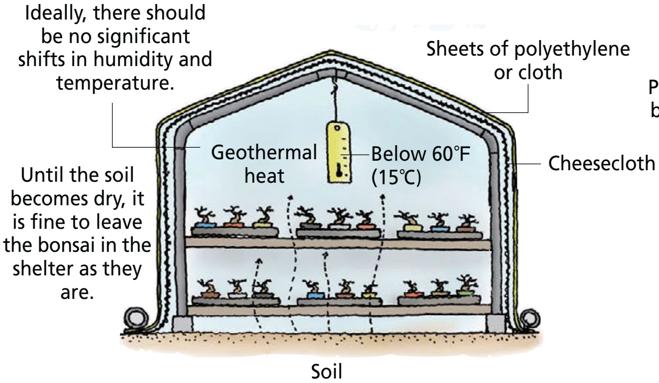

Open the entrance to improve airflow on sunny days, when temperatures rise.
Water bonsai when they appear dry.


Keep the entrance closed on days when it gets cold or when the temperature doesn't rise.

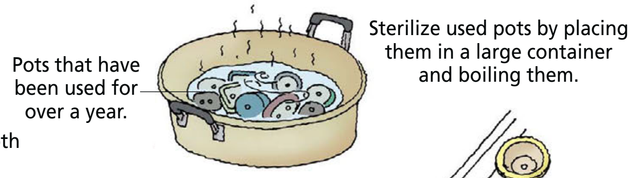
BONSAI SHELTERS WITH GREAT EXPOSURE

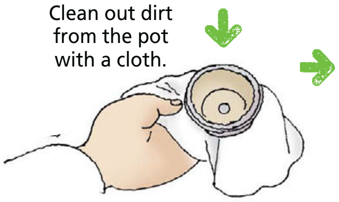

Sheets of polyethylene or cloth
Cheesecloth
The thermometer is kept hanging down where the plants are.
Open the polyethylene or cloth when temperatures rise above 60°F (15°C), and close it at night or when temperatures drop below 60°F (15°C).
Weight
Weight

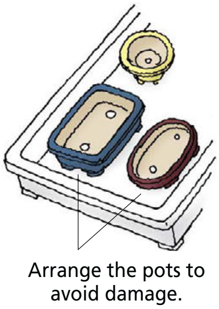
BONSAI SHELTERS WITH LITTLE EXPOSURE


Ideally, there should be no significant shifts in humidity and temperature.
Sheets of polyethylene or cloth
Geothermal heat
Below 60°F (15°C)
Cheesecloth
Until the soil becomes dry, it is fine to leave the bonsai in the shelter as they are.
Soil

Cleaning used pots for re-use


Pots that have been used for over a year.
Sterilize used pots by placing them in a large container and boiling them.

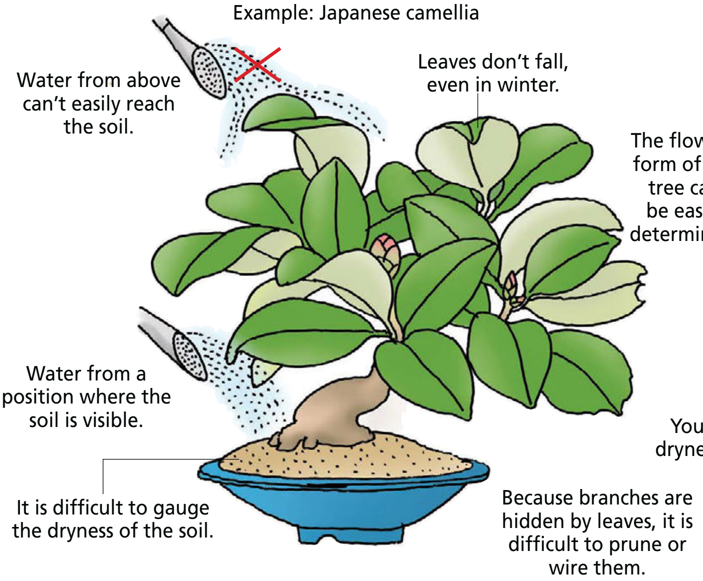

Clean out dirt from the pot with a cloth.


Arrange the pots to avoid damage.

Tree type and watering

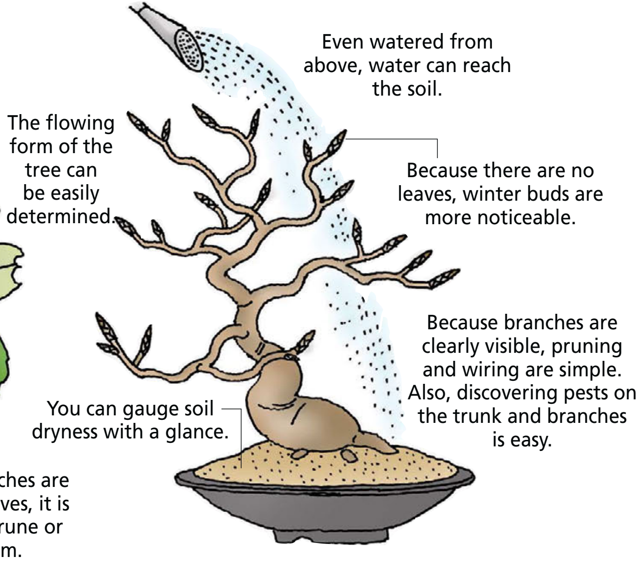
EVERGREEN TREE

Example: Japanese camellia


Water from above can't easily reach the soil.
Leaves don't fall, even in winter.
Water from a position where the soil is visible.
It is difficult to gauge the dryness of the soil.
Because branches are hidden by leaves, it is difficult to prune or wire them.

DECIDUOUS TREE

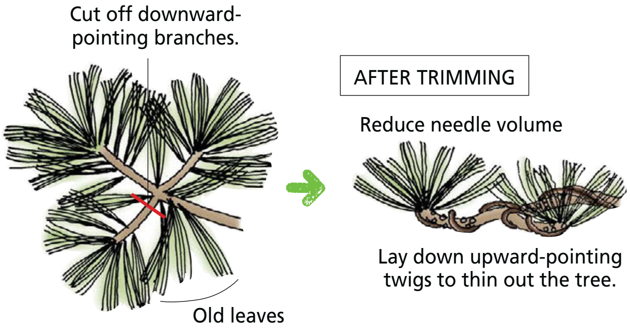
Example: Japanese beech


Even watered from above, water can reach the soil.
The flowing form of the tree can be easily determined.
Because there are no leaves, winter buds are more noticeable.
Because branches are clearly visible, pruning and wiring are simple. Also, discovering pests on the trunk and branches is easy.
You can gauge soil dryness with a glance.

Pruning and wiring

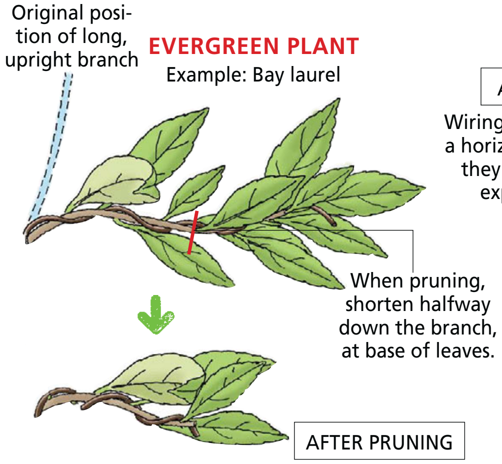
CONIFERS

Example: Japanese white pine


Cut off downward-pointing branches.
AFTER TRIMMING
Reduce needle volume
Lay down upward-pointing twigs to thin out the tree.
Old leaves

EVERGREEN PLANT

Example: Bay laurel

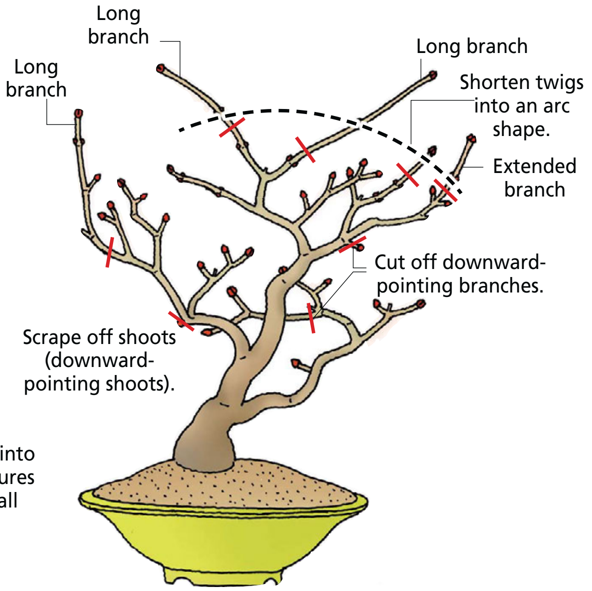

Original position of long, upright branch
When pruning, shorten halfway down the branch, at base of leaves.
AFTER PRUNING

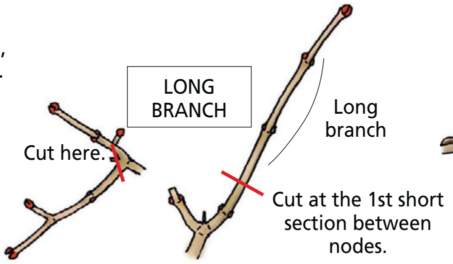
AFTER WIRING

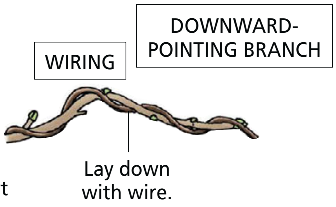
Wiring upright branches into a horizontal position ensures they receive good overall exposure to sunlight.

FOLIAGE PLANTS

Example: Autumn leaf


Long branch
Long branch
Long branch
Shorten twigs into an arc shape.
Extended branch
Cut off downward-pointing branches.
Scrape off shoots (downward-pointing shoots).


LONG BRANCH
Cut here.
Long branch
Cut at the 1st short section between nodes.

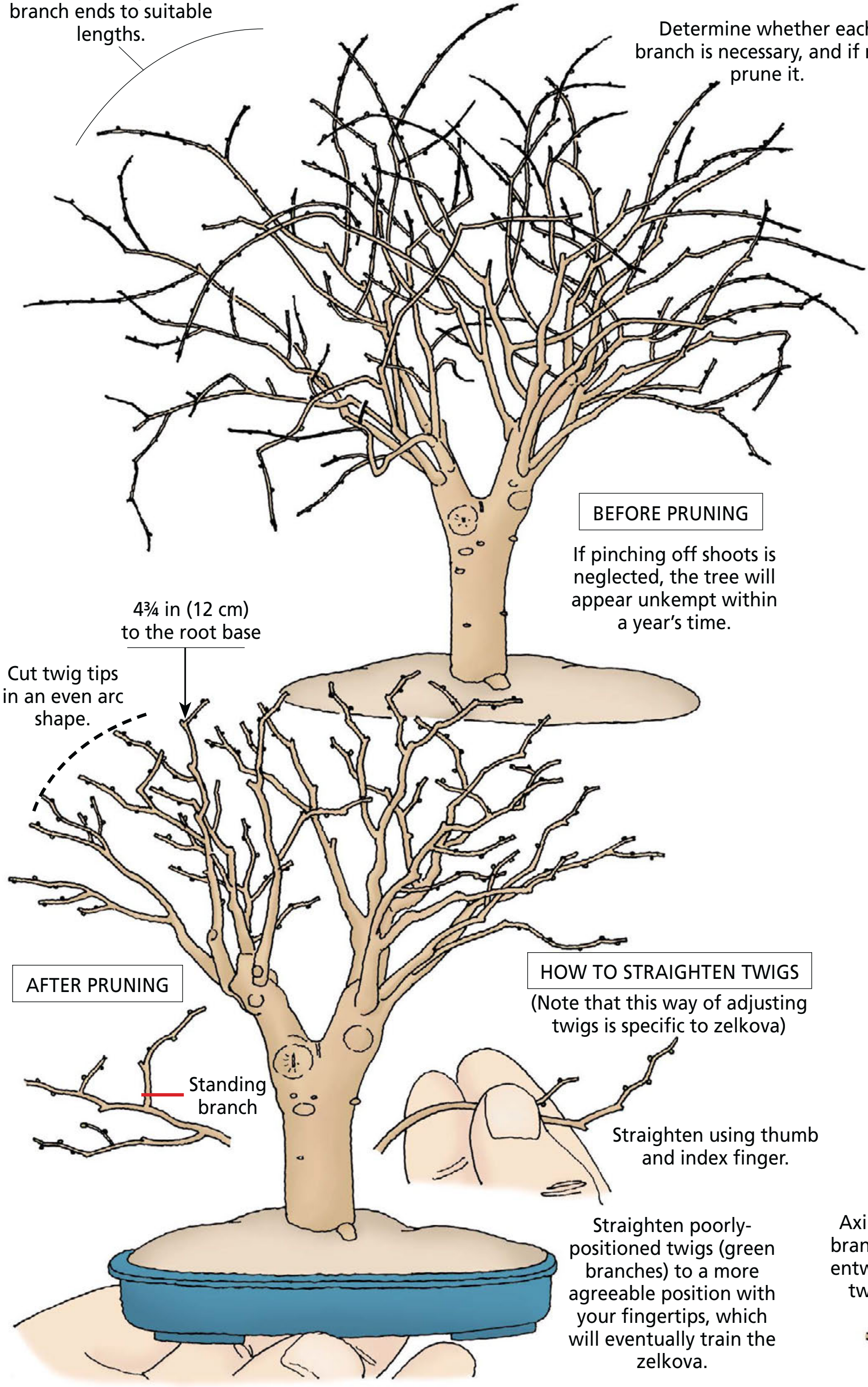

WIRING
DOWNWARD-POINTING BRANCH
Lay down with wire.

Pruning small, leafy trees I

February

- ☑ Pruning small, leafy trees I
- ☑ Pruning small, leafy trees II
- ☑ Second winter disinfection
- ☑ Replanting
- ☑ Wiring and guy-wiring
- ☑ Managing and nurturing bonsai in their shelters
- ☑ Pruning and propagating with cuttings
- ☑ Preparing coarser material
- ☑ Preparing the right soil mix
- ☑ Pruning during the dormant period
- ☑ Grafting

Example: Japanese zelkova


Cut off overgrown branch ends to suitable lengths.
Determine whether each branch is necessary, and if not, prune it.
BEFORE PRUNING
4¾ in (12 cm) to the root base
Cut twig tips in an even arc shape.
AFTER PRUNING
Standing branch
Straighten using thumb and index finger.

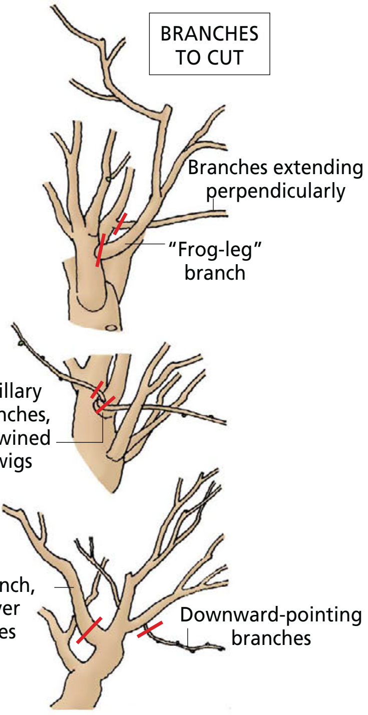
If pinching off shoots is neglected, the tree will appear unkempt within a year's time.

HOW TO STRAIGHTEN TWIGS

(Note that this way of adjusting twigs is specific to zelkova)

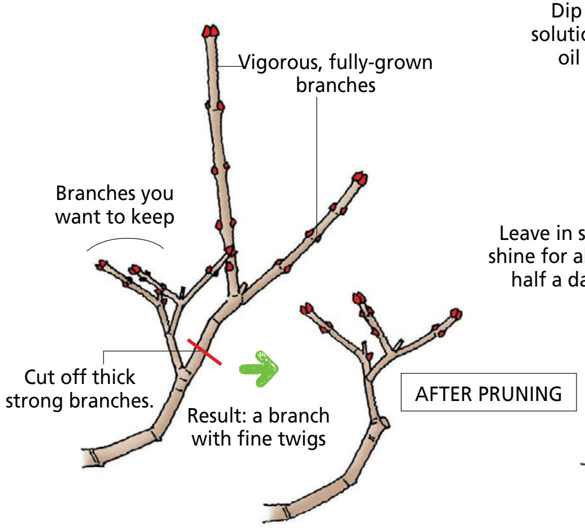
Straighten poorly-positioned twigs (green branches) to a more agreeable position with your fingertips, which will eventually train the zelkova.

BRANCHES TO CUT

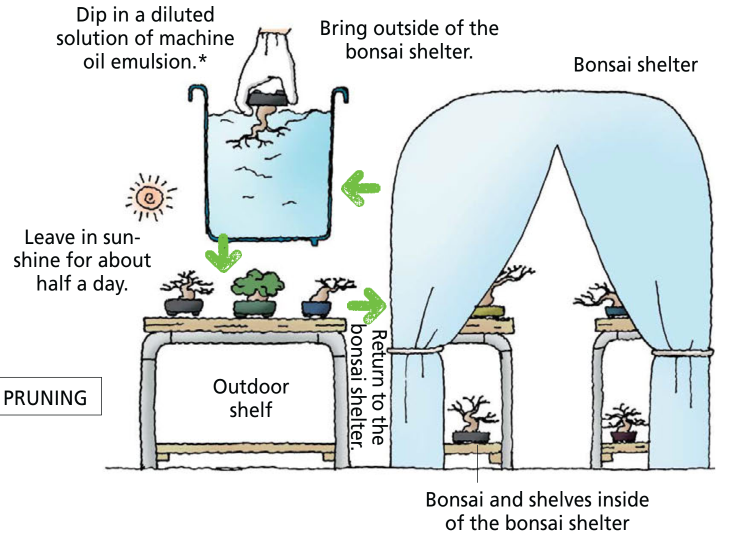

Branches extending perpendicularly
"Frog-leg" branch
Axillary branches, entwined twigs
Thick branch, cross-over branches
Downward-pointing branches

Pruning small, leafy trees II

Example: Japanese maple

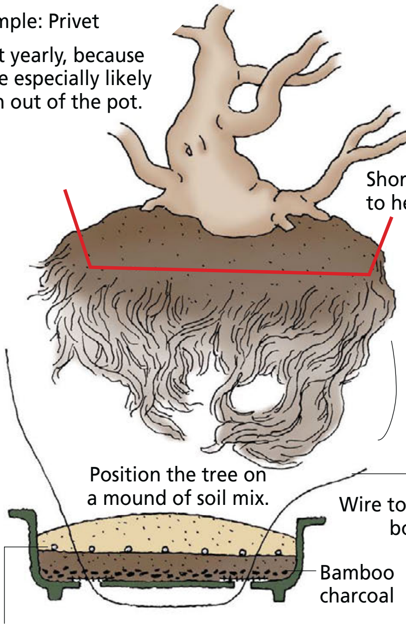

Vigorous, fully-grown branches
Branches you want to keep
Cut off thick strong branches.
Result: a branch with fine twigs
AFTER PRUNING

Second winter disinfection


Dip in a diluted solution of machine oil emulsion.*
Bring outside of the bonsai shelter.
Bonsai shelter
Leave in sunshine for about half a day.
Outdoor shelf
Return to the bonsai shelter.
Bonsai and shelves inside of the bonsai shelter

Replanting

Begin replanting toward the end of the month, still keeping bonsai in shelter.

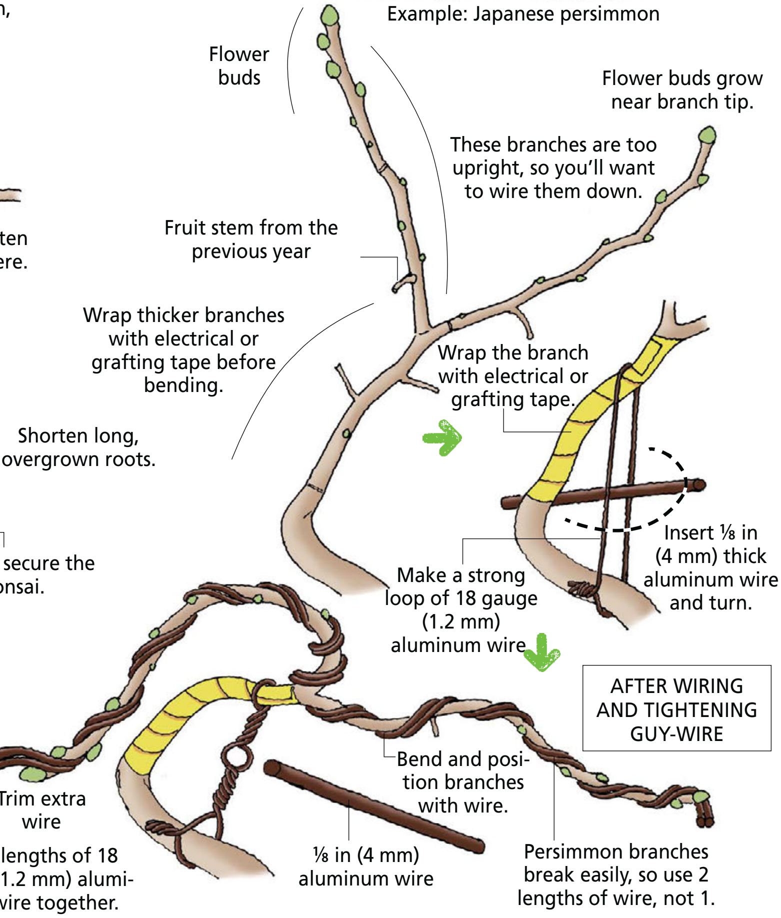

Example: Privet
Replant yearly, because roots are especially likely to push out of the pot.
Shorten to here.
Shorten long, overgrown roots.
Position the tree on a mound of soil mix.
Wire to secure the bonsai.
Bamboo charcoal
Base fertilizer (bone meal or similar) under soil mix

Soil composition

80% *Akadama* soil
20% *Kiryu* sand

Wiring and guy-wiring

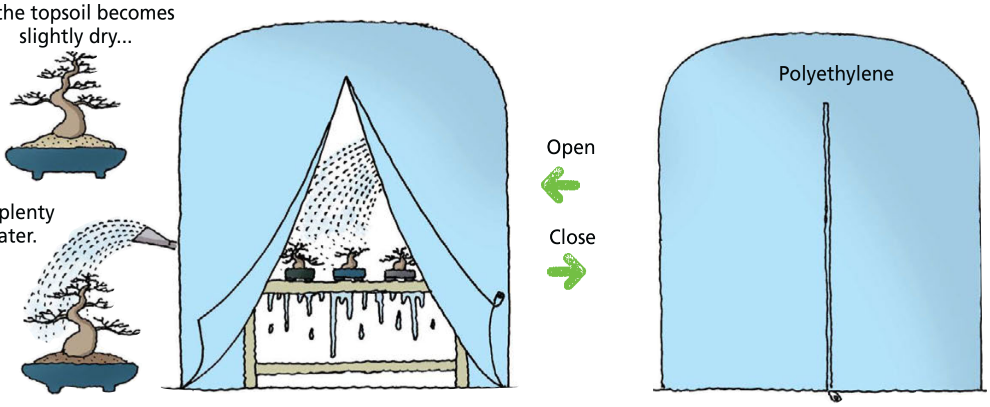
Example: Japanese persimmon


Flower buds
Flower buds grow near branch tip.
These branches are too upright, so you'll want to wire them down.
Fruit stem from the previous year
Wrap thicker branches with electrical or grafting tape before bending.
Wrap the branch with electrical or grafting tape.
Insert ⅛ in (4 mm) thick aluminum wire and turn.
Make a strong loop of 18 gauge (1.2 mm) aluminum wire
AFTER WIRING AND TIGHTENING GUY-WIRE
Bend and position branches with wire.
Trim extra wire
Use 2 lengths of 18 gauge (1.2 mm) aluminum wire together.
⅛ in (4 mm) aluminum wire
Persimmon branches break easily, so use 2 lengths of wire, not 1.

**Machine oil emulsion: In the past, "Lime sulfur" was frequently used, but it has become difficult to obtain from retail sources.*

Managing and nurturing bonsai in their shelters

Conditions do vary, so knowing how to estimate dry conditions in your bonsai shelter is important.



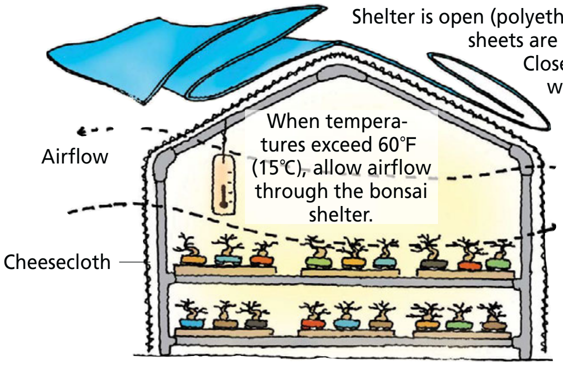
If the topsoil becomes slightly dry...

...give plenty of water.

Watering in the bonsai shelter

The less air movement and the higher the humidity, the slower the topsoil will dry.

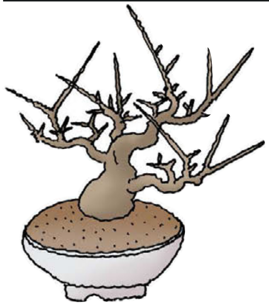
Without follow-up watering, bonsai will dry out again after about a week.



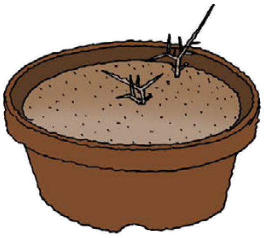
Shelter is open (polyethylene or cloth sheets are folded away). Close the shelter when temperatures drop.

When temperatures exceed 60℉ (15℃), allow airflow through the bonsai shelter.

Pruning and propagating with cuttings



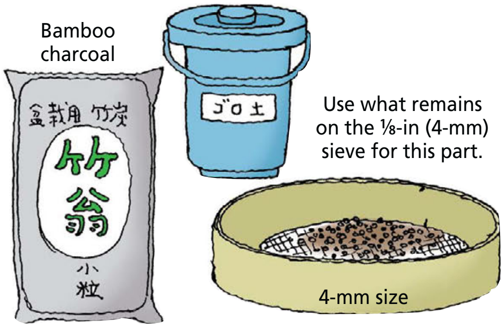
Make good use of overly-long twigs by cutting them off and propagating them as cuttings.



Fresh cuttings can be propagated in planters kept prepared for them.

Preparing coarser material

The coarser mixture spread in the bottom of the pot may be gravel, sand or mixed soil (⅛ to ¼-in / 4 to 6-mm grains).



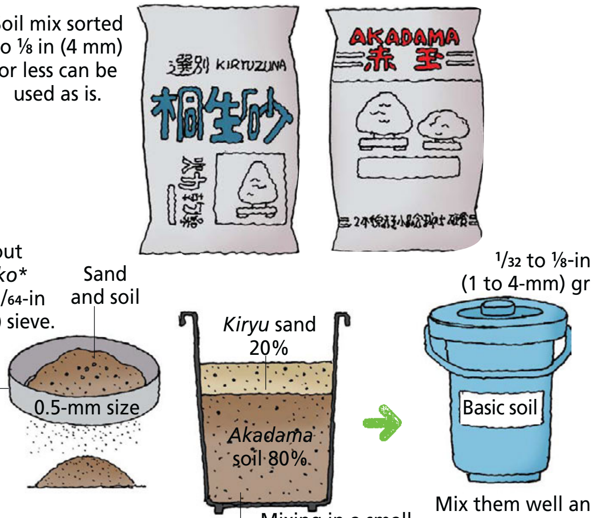
Bamboo charcoal

Use what remains on the ⅛-in (4-mm) sieve for this part.

Mix bamboo charcoal with gravel or use as-is (⅛ to ¼-in / 4 to 6-mm grains)

Preparing the right soil mix

Keep soil prepared for replanting next year (refer to pages 16 and 17).



Kiryu sand

Hard *Akadama* soil

Soil mix sorted to ⅛ in (4 mm) or less can be used as is.

Sift out *mijinko** with a 1/64-in (0.5-mm) sieve.

Sand and soil

Mixing in a small amount of bamboo charcoal is fine.

1/32 to ⅛-in (1 to 4-mm) grains

Mix them well and keep stored in a labeled container.

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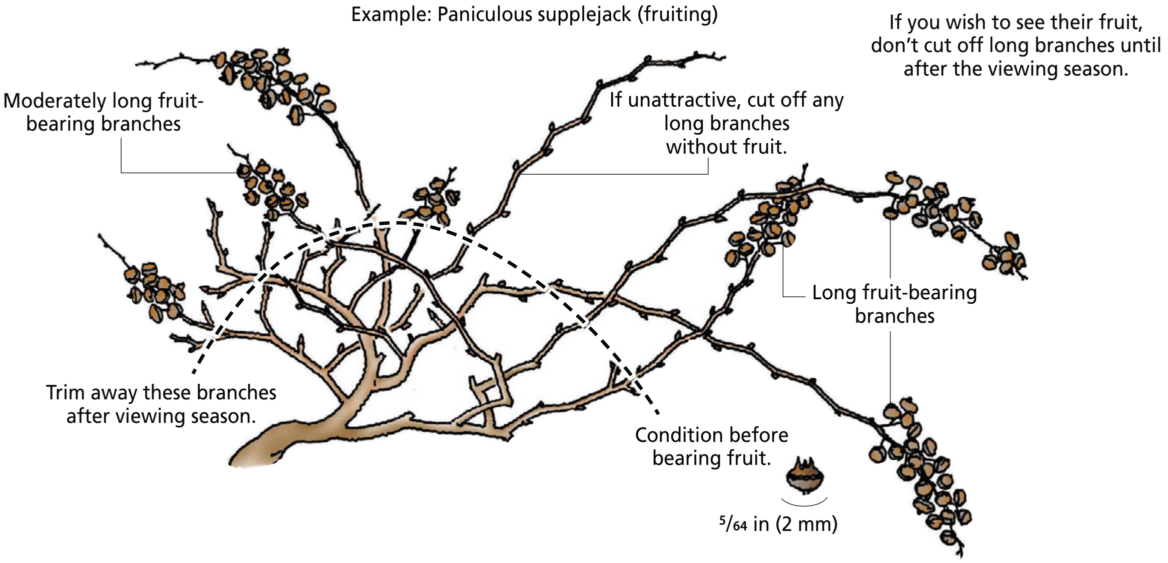
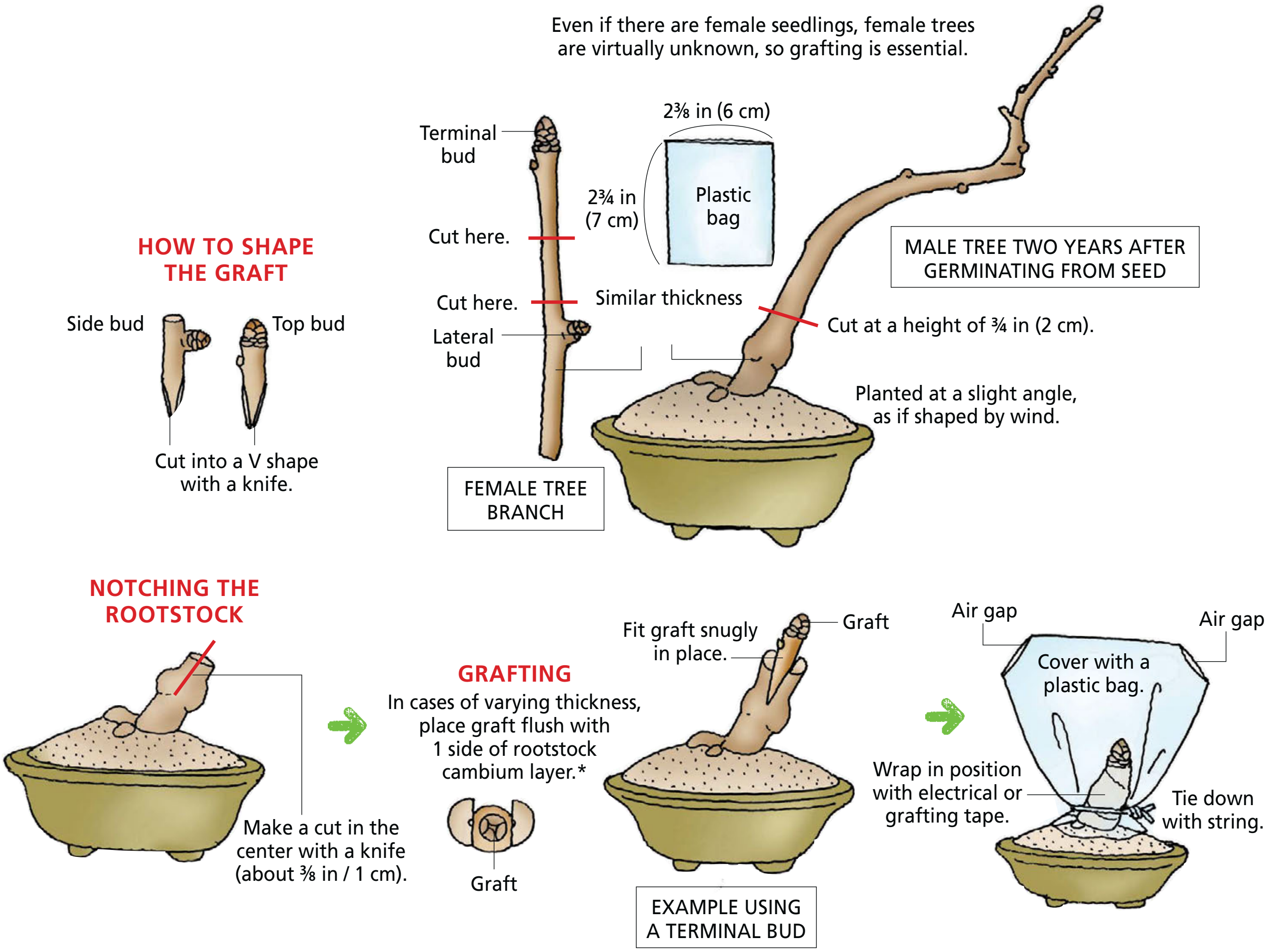
*Mijinko: *Finely powdered volcanic ash particles*

Pruning during the dormant period


Example: Paniculous supplejack (fruiting)
If you wish to see their fruit, don't cut off long branches until after the viewing season.
Moderately long fruit-bearing branches
If unattractive, cut off any long branches without fruit.
Long fruit-bearing branches
Trim away these branches after viewing season.
Condition before bearing fruit.
5/64 in (2 mm)

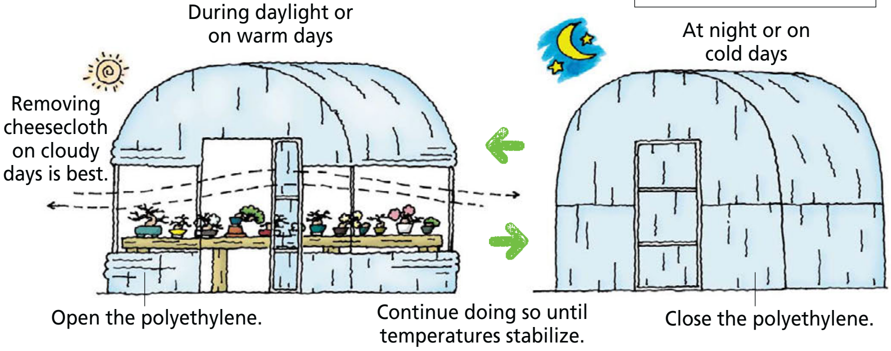
Grafting

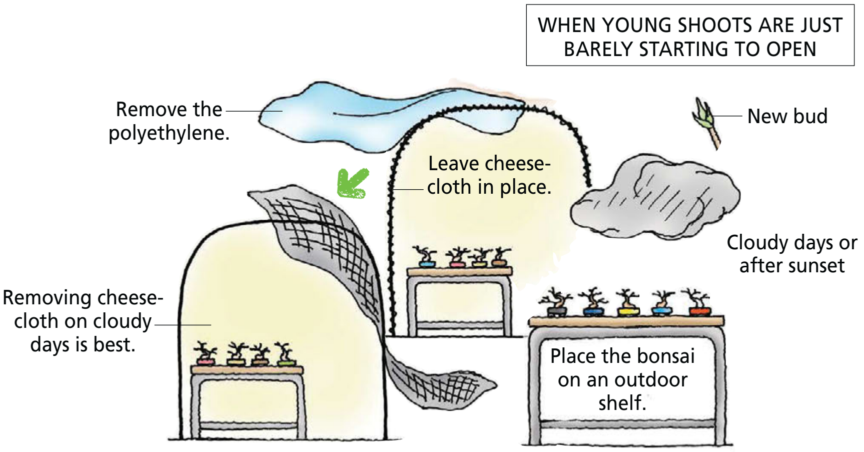

Even if there are female seedlings, female trees are virtually unknown, so grafting is essential.
HOW TO SHAPE THE GRAFT
Side bud
Top bud
Cut into a V shape with a knife.
Terminal bud
Cut here.
Cut here.
Lateral bud
FEMALE TREE BRANCH
2⅜ in (6 cm)
2¾ in (7 cm)
Plastic bag
Similar thickness
MALE TREE TWO YEARS AFTER GERMINATING FROM SEED
Cut at a height of ¾ in (2 cm).
Planted at a slight angle, as if shaped by wind.
NOTCHING THE ROOTSTOCK
Make a cut in the center with a knife (about ⅜ in / 1 cm).
GRAFTING
In cases of varying thickness, place graft flush with 1 side of rootstock cambium layer.*
Graft
Fit graft snugly in place.
Graft
EXAMPLE USING A TERMINAL BUD
Air gap
Air gap
Cover with a plastic bag.
Wrap in position with electrical or grafting tape.
Tie down with string.

Cambium layer: the structural layer underneath the bark that is related to trunk and root growth. Refer to page 180.

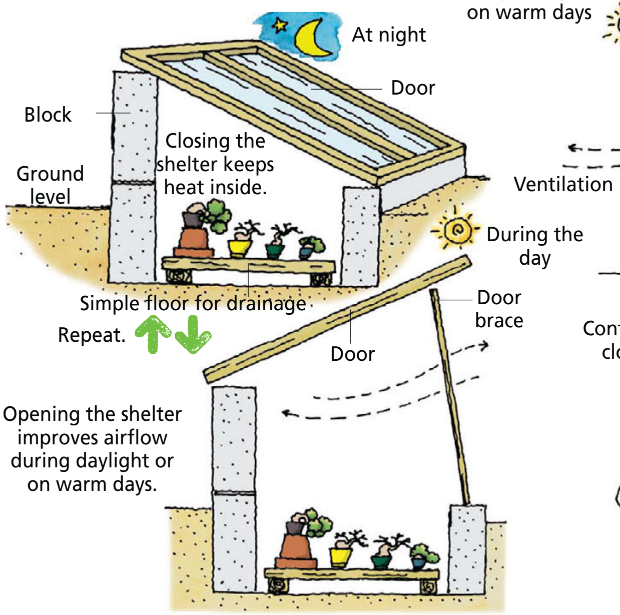
Opening bonsai shelters

POLYTUNNEL

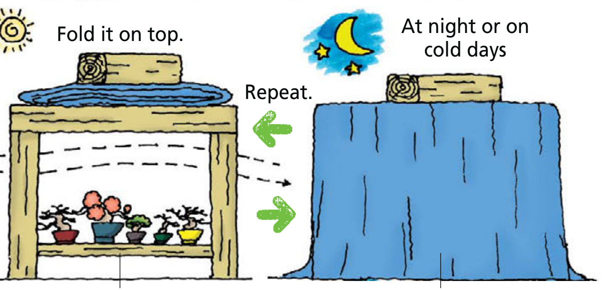

EARLY TO MID MARCH
During daylight or on warm days
Removing cheesecloth on cloudy days is best.
At night or on cold days
Open the polyethylene.
Continue doing so until temperatures stabilize.
Close the polyethylene.


WHEN YOUNG SHOOTS ARE JUST BARELY STARTING TO OPEN
Remove the polyethylene.
New bud
Leave cheese-cloth in place.
Cloudy days or after sunset
Removing cheese-cloth on cloudy days is best.
Place the bonsai on an outdoor shelf.

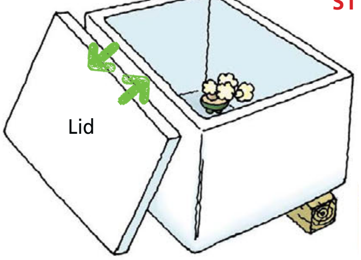
SMALL SEMI-BELOW-GROUND BONSAI SHELTERS


At night
Door
Block
Ground level
Closing the shelter keeps heat inside.
Ventilation
During the day
Simple floor for drainage
Door brace
Repeat.
Door
Opening the shelter improves airflow during daylight or on warm days.

UNDER-SHELVES USED FOR BONSAI SHELTER


During daylight or on warm days
Fold it on top.
At night or on cold days
Repeat.
Under-shelf bonsai shelter
Sheets of polyethylene or cloth
Continue opening and closing as needed.

STYROFOAM BOX

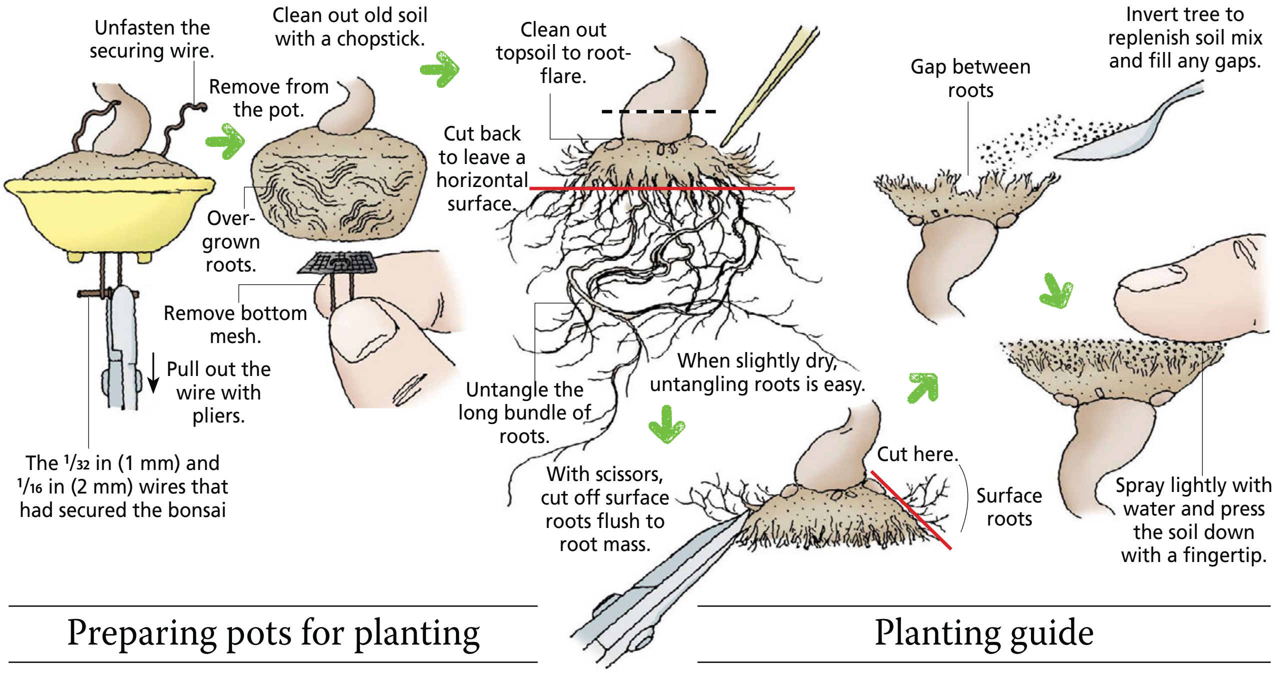


Open the lid during the day and close it at night.

March

- ☑ Opening bonsai shelters
- ☑ Replanting preparation
- ☑ Preparing pots for planting
- ☑ Planting guide
- ☑ Replanting guide
- ☑ Preparing a mound of soil
- ☑ Types of soil mixes
- ☑ Preparing the soil mix (sieving)
- ☑ Example of soil formulation
- ☑ Soil composition

Replanting preparation


Unfasten the securing wire.

Clean out old soil with a chopstick.

Remove from the pot.

Over-grown roots.

Remove bottom mesh.

Pull out the wire with pliers.

The 1/32 in (1 mm) and 1/16 in (2 mm) wires that had secured the bonsai

Clean out topsoil to root-flare.

Cut back to leave a horizontal surface.

Untangle the long bundle of roots.

When slightly dry, untangling roots is easy.

With scissors, cut off surface roots flush to root mass.

Cut here.

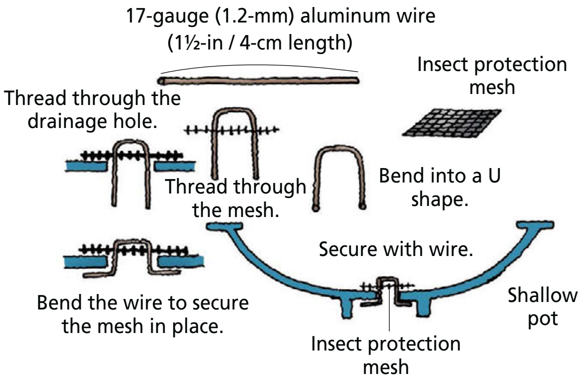
Surface roots

Gap between roots

Invert tree to replenish soil mix and fill any gaps.

Spray lightly with water and press the soil down with a fingertip.

Preparing pots for planting


17-gauge (1.2-mm) aluminum wire (1½-in / 4-cm length)

Thread through the drainage hole.

Insect protection mesh

Thread through the mesh.

Bend into a U shape.

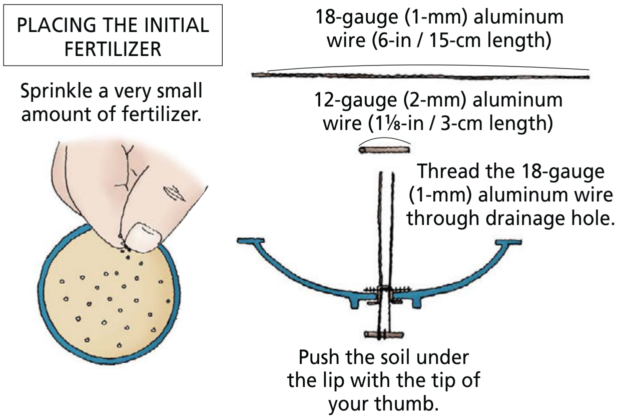
Secure with wire.

Bend the wire to secure the mesh in place.

Shallow pot

Insect protection mesh

Planting guide


PLACING THE INITIAL FERTILIZER

Sprinkle a very small amount of fertilizer.

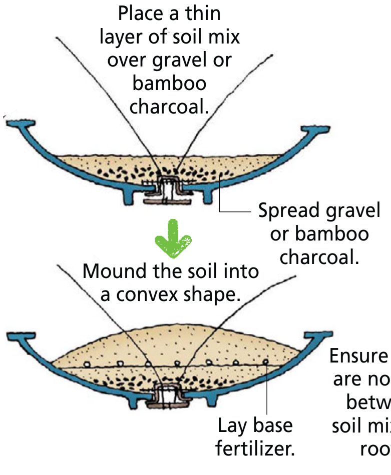
18-gauge (1-mm) aluminum wire (6-in / 15-cm length)

12-gauge (2-mm) aluminum wire (1⅛-in / 3-cm length)

Thread the 18-gauge (1-mm) aluminum wire through drainage hole.

Push the soil under the lip with the tip of your thumb.

ENSURE THERE ARE NO GAPS BETWEEN SOIL MIX AND ROOTS

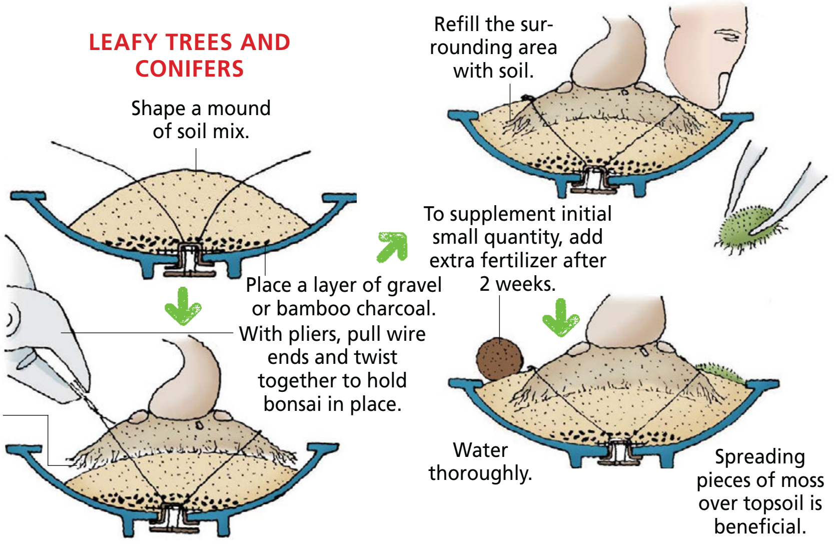

Place a thin layer of soil mix over gravel or bamboo charcoal.

Spread gravel or bamboo charcoal.

Mound the soil into a convex shape.

Lay base fertilizer.

LEAFY TREES AND CONIFERS


Shape a mound of soil mix.

Place a layer of gravel or bamboo charcoal.

With pliers, pull wire ends and twist together to hold bonsai in place.

Ensure there are no gaps between soil mix and roots.

Refill the surrounding area with soil.

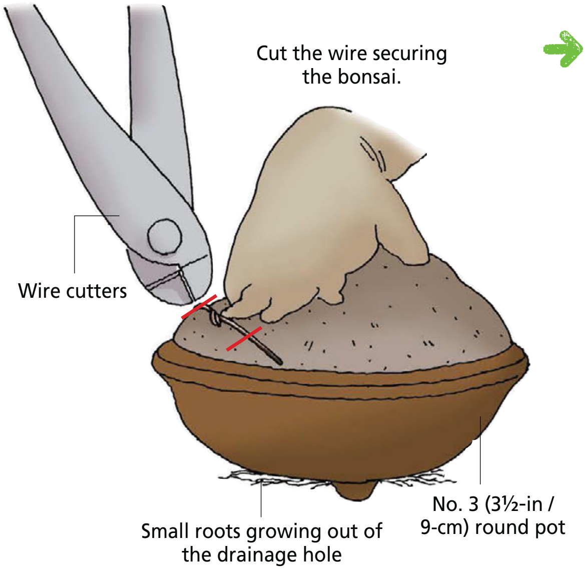
To supplement initial small quantity, add extra fertilizer after 2 weeks.

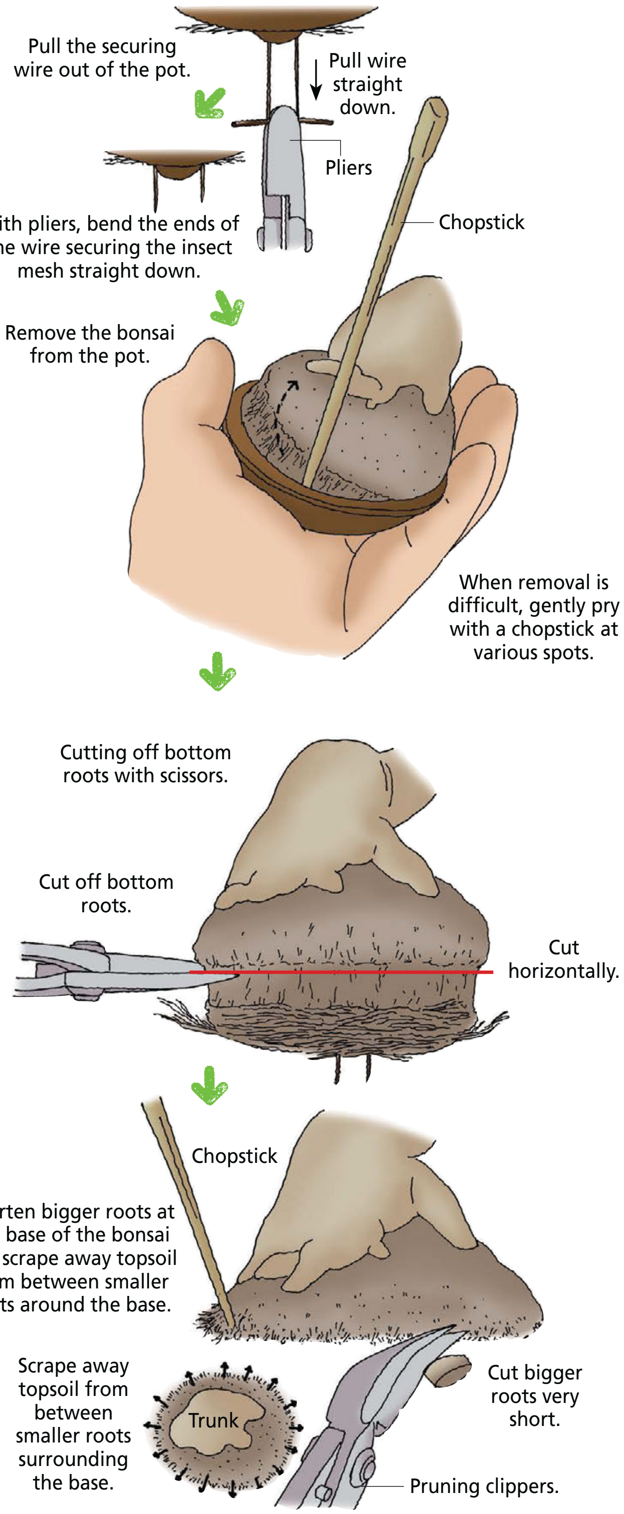
Water thoroughly.

Spreading pieces of moss over topsoil is beneficial.

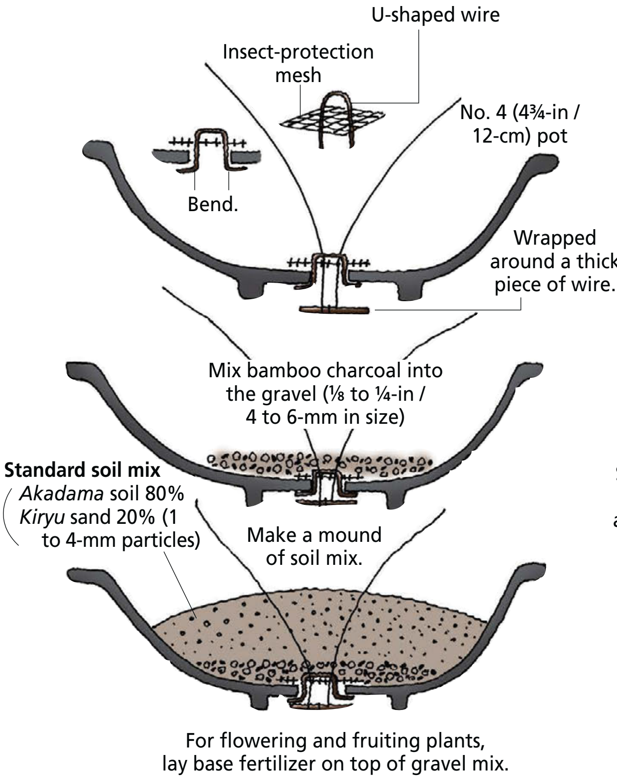
Replanting guide

Example: Replanting a maple from a no. 3 pot into a no. 4 pot

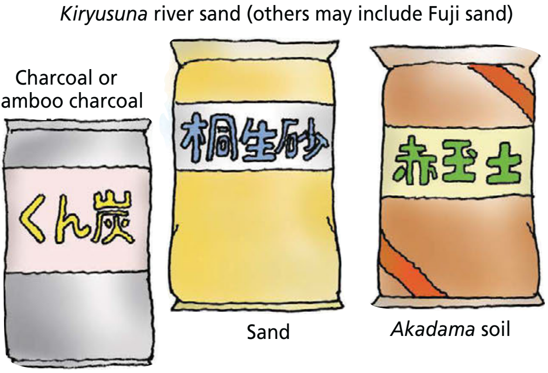

Cut the wire securing the bonsai.
Wire cutters
Small roots growing out of the drainage hole
No. 3 (3½-in / 9-cm) round pot


Pull the securing wire out of the pot.
Pull wire straight down.
Pliers
With pliers, bend the ends of the wire securing the insect mesh straight down.
Chopstick
Remove the bonsai from the pot.
When removal is difficult, gently pry with a chopstick at various spots.
Cutting off bottom roots with scissors.
Cut off bottom roots.
Cut horizontally.
Chopstick
Shorten bigger roots at the base of the bonsai and scrape away topsoil from between smaller roots around the base.
Scrape away topsoil from between smaller roots surrounding the base.
Trunk
Cut bigger roots very short.
Pruning clippers.

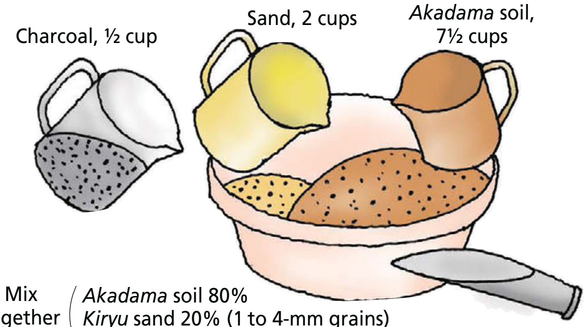
Preparing a mound of soil


U-shaped wire
Insect-protection mesh
No. 4 (4¾-in / 12-cm) pot
Bend.
Wrapped around a thick piece of wire.
Mix bamboo charcoal into the gravel (⅛ to ¼-in / 4 to 6-mm in size)
Standard soil mix
Akadama soil 80%
Kiryu sand 20% (1 to 4-mm particles)
Make a mound of soil mix.
For flowering and fruiting plants, lay base fertilizer on top of gravel mix.

Types of soil mixes

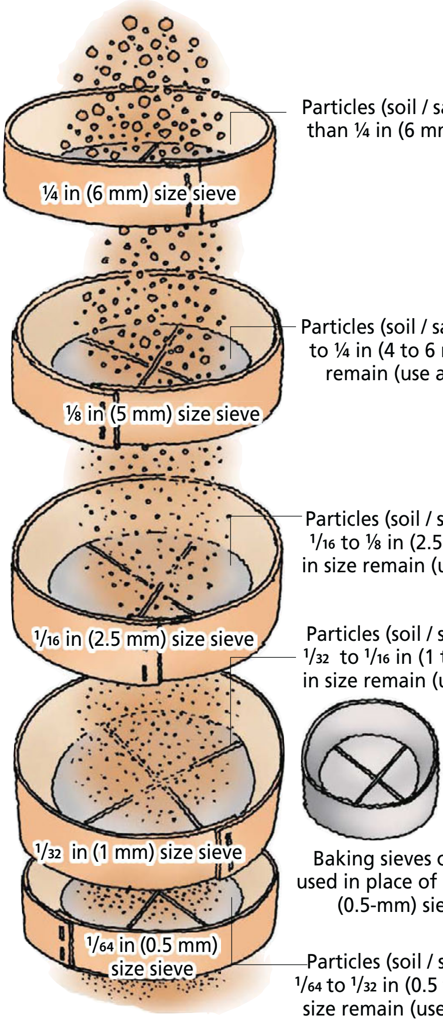

Kiryusuna river sand (others may include Fuji sand)
Charcoal or bamboo charcoal
くん炭
桐生砂
赤玉土
Sand
Akadama soil

Example of soil formulation


Charcoal, ½ cup
Sand, 2 cups
Akadama soil, 7½ cups

Mix together well
Akadama soil 80%
Kiryu sand 20% (1 to 4-mm grains)
+ about 5% bamboo charcoal

Preparing the soil mix (sieving)


¼ in (6 mm) size sieve
⅛ in (5 mm) size sieve
1/16 in (2.5 mm) size sieve
1/32 in (1 mm) size sieve
1/64 in (0.5 mm) size sieve

Particles (soil / sand) larger than ¼ in (6 mm) remain.

Particles (soil / sand) from ⅛ to ¼ in (4 to 6 mm) in size remain (use as gravel).

Particles (soil / sand) from 1/16 to ⅛ in (2.5 to 4 mm) in size remain (use as soil).

Particles (soil / sand) from 1/32 to 1/16 in (1 to 2.5 mm) in size remain (use as soil).

Baking sieves can be used in place of a 1/64 -in (0.5-mm) sieve.

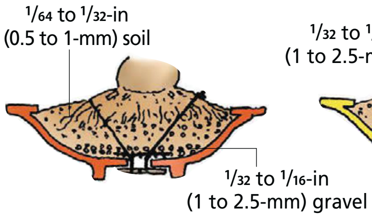
Particles (soil / sand) from 1/64 to 1/32 in (0.5 to 1 mm) in size remain (used as soil in miniature bonsai pots).

Fine dust soil. Use mixed with *keto* soil ("peat clay" or "peat muck") for slab or rock bonsai

Soil composition

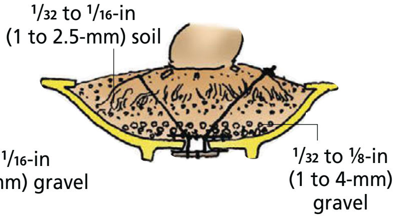
NO. 1 POT

DIAMETER 1⅛ IN (3 CM)


1/64 to 1/32-in (0.5 to 1-mm) soil
1/32 to 1/16-in (1 to 2.5-mm) gravel

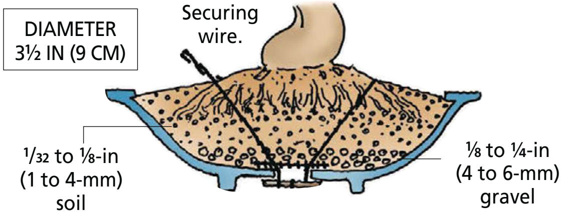
NO. 2 POT

DIAMETER 2⅜ IN (6 CM)


1/32 to 1/16-in (1 to 2.5-mm) soil
1/32 to ⅛-in (1 to 4-mm) gravel

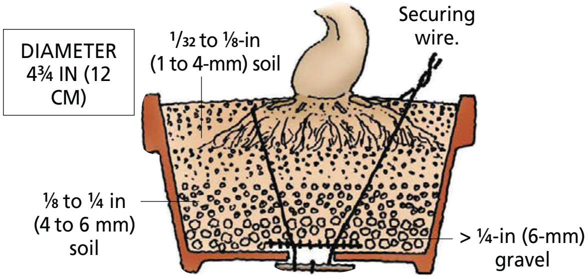
NO. 3 POT

DIAMETER 3½ IN (9 CM)


Securing wire.
1/32 to ⅛-in (1 to 4-mm) soil
⅛ to ¼-in (4 to 6-mm) gravel

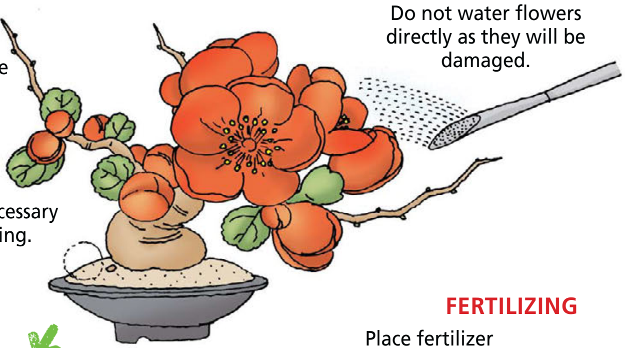
NO. 4 POT (TRAINING POT)

DIAMETER 4¾ IN (12 CM)


1/32 to ⅛-in (1 to 4-mm) soil
Securing wire.
⅛ to ¼ in (4 to 6 mm) soil
> ¼-in (6-mm) gravel

Pot size is determined by a number of factors. A no. 1 pot is 1⅛ in (3 cm) in diameter.

Flowering trees: Flowering and care



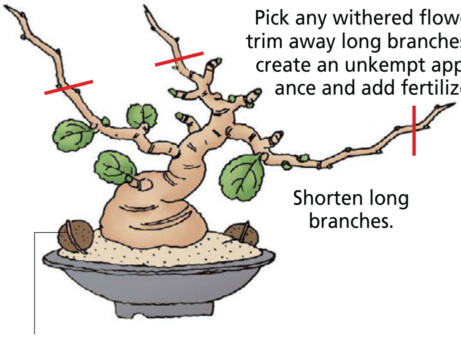
Example: Flowering quince

Do not water flowers directly as they will be damaged.

Fertilizer is unnecessary during flowering.

CARE AFTER FLOWERING

Pick any withered flowers*, trim away long branches that create an unkempt appearance and add fertilizer.

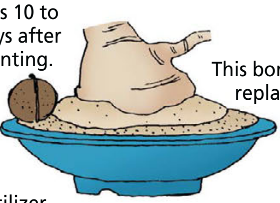


Shorten long branches.

Fertilizer pellets placed at side of pot

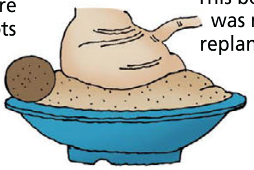
FERTILIZING

Place fertilizer pellets 10 to 14 days after replanting.



This bonsai was replanted.

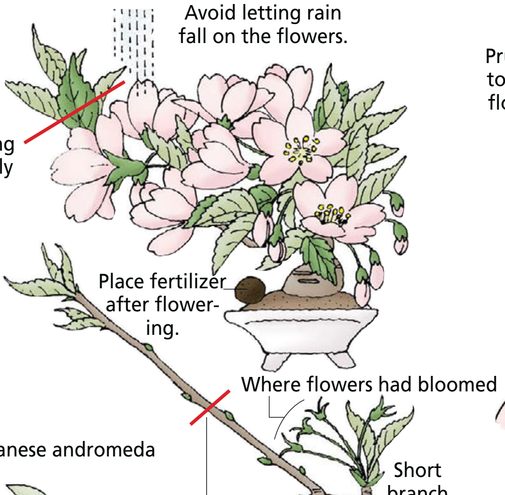
Place fertilizer pellets where young shoots had been growing.



This bonsai was not replanted.

☑ Flowering trees: Flowering and care
☑ Fruiting trees: Flowering and cross-pollination
☑ Leafy trees: Pinching off shoots
☑ Replanting
☑ Watering
☑ Responding to aphids
☑ Flowering trees: Pinching off shoots after flowering
☑ Protecting against late frost

PRUNING



Example: Fuji cherry

Avoid letting rain fall on the flowers.

Trim apical shoots of long branches that seem likely to grow well.

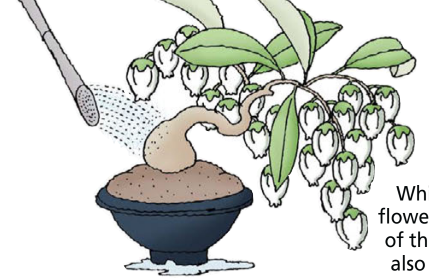
Place fertilizer after flowering.

Where flowers had bloomed

Short branch

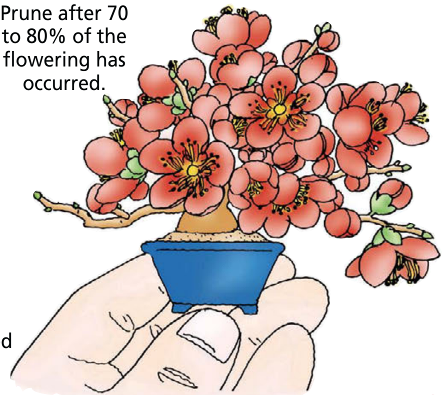
Shorten long branches but keep 2 or 3 leaf buds.

Water at root base, not on the flowers.



Example: Japanese andromeda

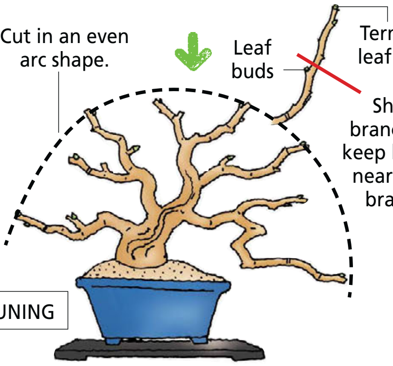
White cocoon-shaped flowers hang from the tip of the branch. They may also appear in crimson.



Example: Japanese plum

Prune after 70 to 80% of the flowering has occurred.

PRUNING



Cut in an even arc shape.

Leaf buds

Terminal leaf buds

Shorten branches but keep leaf buds near base of branches.

AFTER PRUNING

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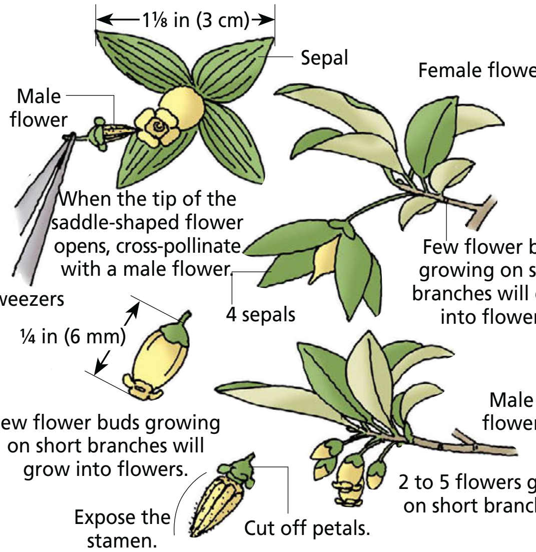
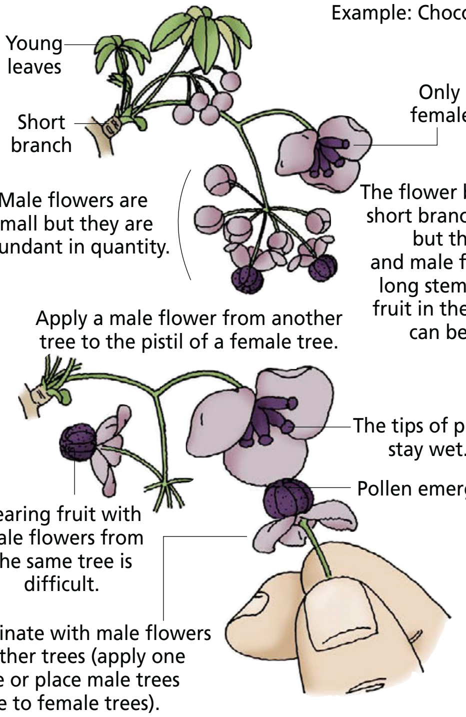
*Withered flower picking: Removing remains of dead flowers that hadn't fallen off naturally. This protects against pests and weakening.

Fruiting trees: Flowering and cross-pollination

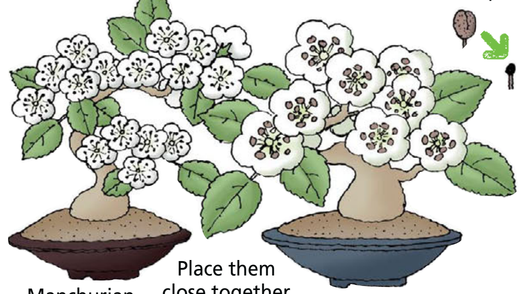
Example: Chinese persimmon

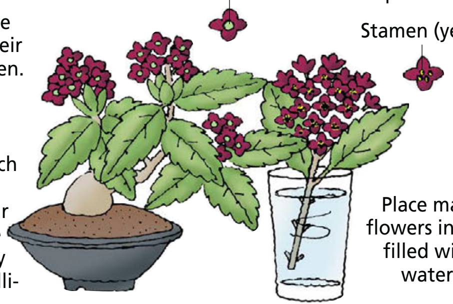

1⅛ in (3 cm)
Sepal
Female flower
Male flower
When the tip of the saddle-shaped flower opens, cross-pollinate with a male flower.
Tweezers
4 sepals
Few flower buds growing on short branches will grow into flowers.
¼ in (6 mm)
Few flower buds growing on short branches will grow into flowers.
Male flower
2 to 5 flowers grow on short branches.
Expose the stamen.
Cut off petals.

Example: Chocolate vine

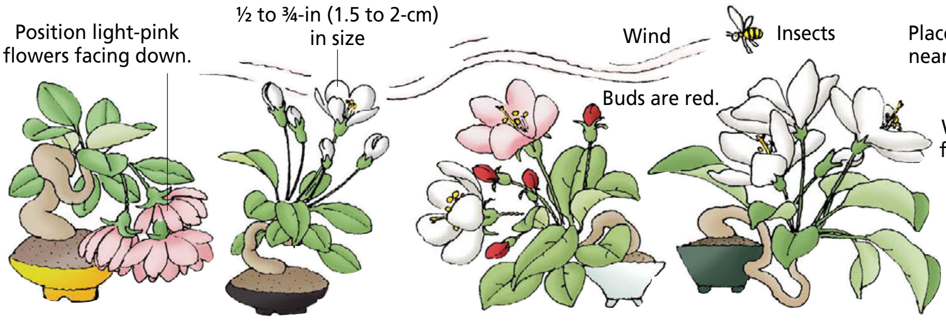

Young leaves
Short branch
Only 1 large female flower
Male flowers are small but they are abundant in quantity.
The flower buds grown on short branches will open, but the female and male flowers are on long stems, so bearing fruit in these conditions can be difficult.
Apply a male flower from another tree to the pistil of a female tree.
The tips of pistils stay wet.
Pollen emerges here.
Bearing fruit with male flowers from the same tree is difficult.
Cross-pollinate with male flowers from other trees (apply one by one or place male trees close to female trees).

Example: Princess pear and Manchurian pear

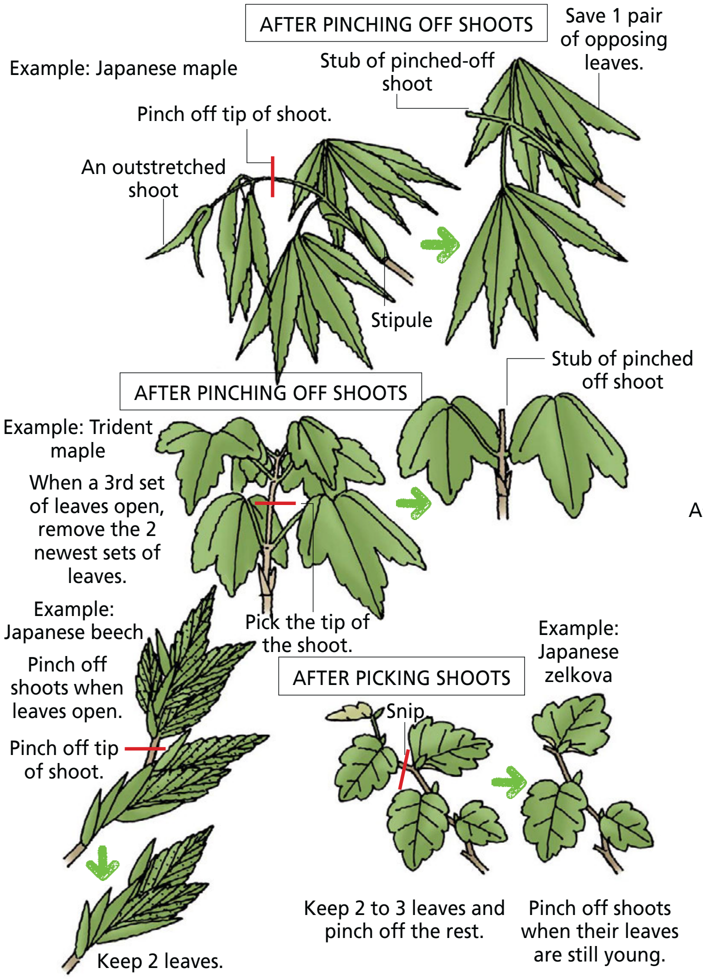

Bearing fruit without another tree is difficult.
Brown pollen
These become black when their pollen has fallen.
Manchurian pear
Place them close together so they will cross-pollinate.
Princess pear
Their petals change from pale red to white.
Have them cross-pollinate before pollen has fallen.


Pistil (green)
Example: Japanese laurel
Stamen (yellow)
Place a branch of male flowers near the female tree so they will cross-pollinate.
Female tree
Place male flowers in cup filled with water.
Male flowers (a branch from a wild tree)

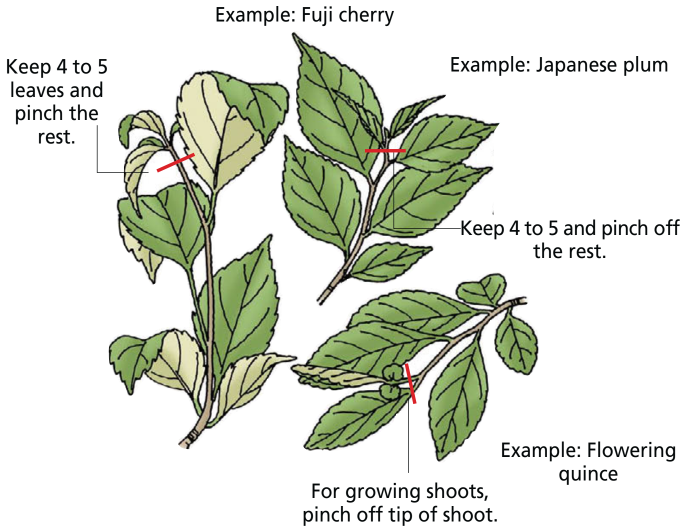
Example: Hall crabapple, Siebold's crab, Toringo crabapple, Pear-leaf crabapple


Position light-pink flowers facing down.
Small flowers of about ½ to ¾-in (1.5 to 2-cm) in size
Wind
Insects
Place a tree of the same phylum nearby and allow them to cross-pollinate naturally.
Buds are red.
White flower
Let wind and insects cause them to cross-pollinate naturally.
Hall crabapple
Siebold's crab
Toringo crabapple
Pear-leaf crabapple

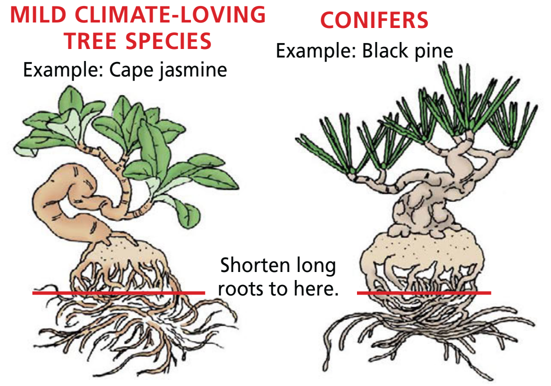
Leafy trees: Pinching off shoots


AFTER PINCHING OFF SHOOTS
Save 1 pair of opposing leaves.
Example: Japanese maple
Stub of pinched-off shoot
Pinch off tip of shoot.
An outstretched shoot
Stipule
Stub of pinched off shoot
AFTER PINCHING OFF SHOOTS
Example: Trident maple
When a 3rd set of leaves open, remove the 2 newest sets of leaves.
Example: Japanese beech
Pinch off shoots when leaves open.
Pinch off tip of shoot.
Pick the tip of the shoot.
Example: Japanese zelkova
AFTER PICKING SHOOTS
Snip
Keep 2 leaves.
Keep 2 to 3 leaves and pinch off the rest.
Pinch off shoots when their leaves are still young.

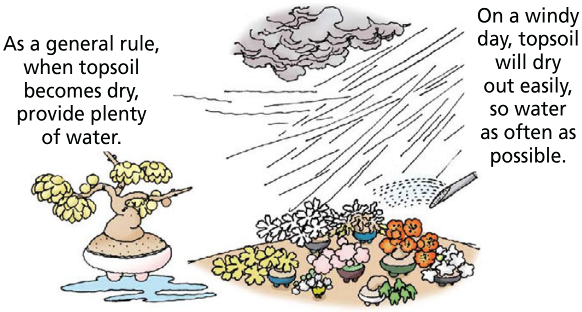
Flowering trees: Pinching off shoots after flowering


Example: Fuji cherry
Keep 4 to 5 leaves and pinch the rest.
Example: Japanese plum
Keep 4 to 5 and pinch off the rest.
Example: Flowering quince
For growing shoots, pinch off tip of shoot.

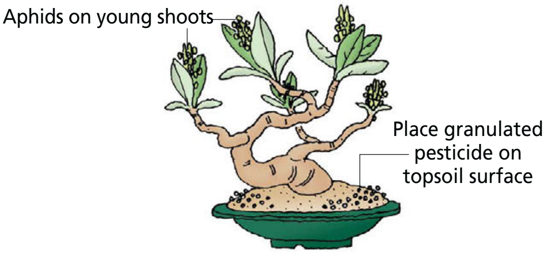
Replanting


MILD CLIMATE-LOVING TREE SPECIES
Example: Cape jasmine
CONIFERS
Example: Black pine
Shorten long roots to here.

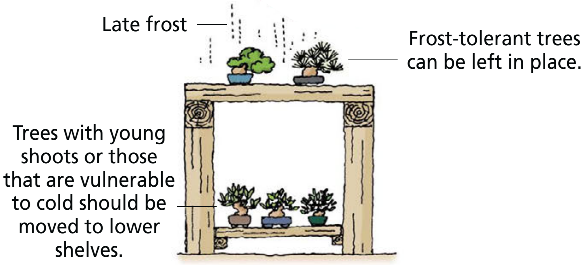
Watering


As a general rule, when topsoil becomes dry, provide plenty of water.
On a windy day, topsoil will dry out easily, so water as often as possible.

Responding to aphids


Aphids on young shoots
Place granulated pesticide on topsoil surface

Protecting against late frost

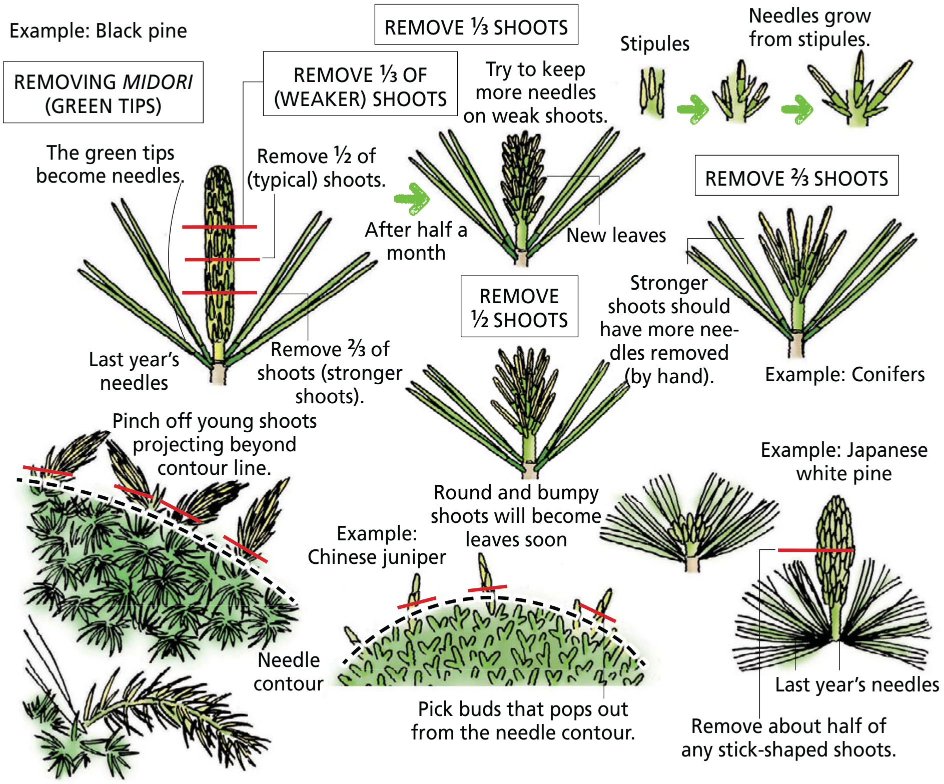

Late frost
Frost-tolerant trees can be left in place.
Trees with young shoots or those that are vulnerable to cold should be moved to lower shelves.

**A stipule is an outgrowth produced on either side of the base of a leafstalk, or any small leaves or leaf parts.*

May

- ☑ **Pinching off conifer shoots**
- ☑ **Leafy trees: Pinching off shoots**
- ☑ **Fruiting trees: Managing bonsai flowering seasons**
- ☑ **Disinfecting with pesticide**
- ☑ **Flowering trees: Flowering**
- ☑ **Leafy trees: Second bud picking**
- ☑ **Fruiting trees: Flowering**
- ☑ **Controlling shoots**
- ☑ **Adding fertilizer**

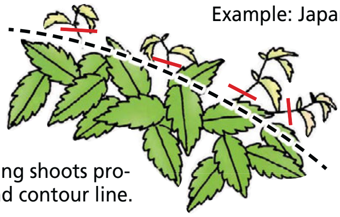
Pinching off conifer shoots


Example: Black pine
REMOVING *MIDORI* (GREEN TIPS)
The green tips become needles.
Last year's needles
REMOVE ⅓ SHOOTS
REMOVE ⅓ OF (WEAKER) SHOOTS
Remove ½ of (typical) shoots.
Remove ⅔ of shoots (stronger shoots).
Try to keep more needles on weak shoots.
After half a month
New leaves
Stipules
Needles grow from stipules.
REMOVE ⅔ SHOOTS
REMOVE ½ SHOOTS
Stronger shoots should have more needles removed (by hand).
Example: Conifers
Pinch off young shoots projecting beyond contour line.
Needle contour
Round and bumpy shoots will become leaves soon
Example: Chinese juniper
Pick buds that pops out from the needle contour.
Example: Japanese white pine
Last year's needles
Remove about half of any stick-shaped shoots.

While shaping a branch, pull out projecting *candles* (clusters of needles) for a moment and cut them off with scissors.

For details, refer to page 151, "How to Care for Coniferous Bonsai."

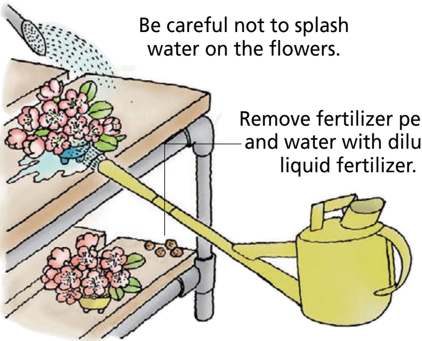
Leafy trees: Pinching off shoots



Example: Japanese zelkova

Pinch off young shoots projecting beyond contour line.

Fruiting trees: Managing bonsai flowering seasons



Be careful not to splash water on the flowers.

Remove fertilizer pellets and water with diluted liquid fertilizer.

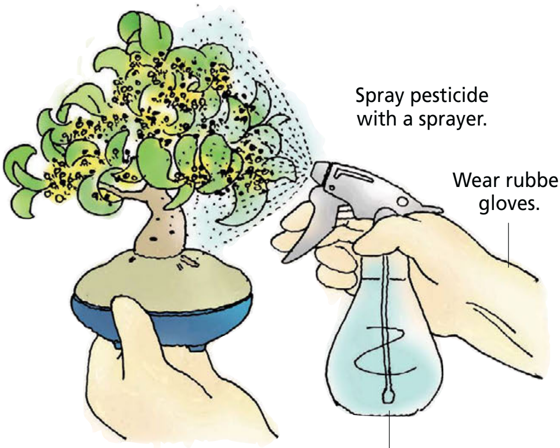
Sprinkle water at the base to prevent flushing away pollen.

Move bonsai to a lower shelf during heavy rains.

Disinfecting with pesticide

If possible, preventative disinfection is preferable.

Aphids and other pests are found on young shoots.

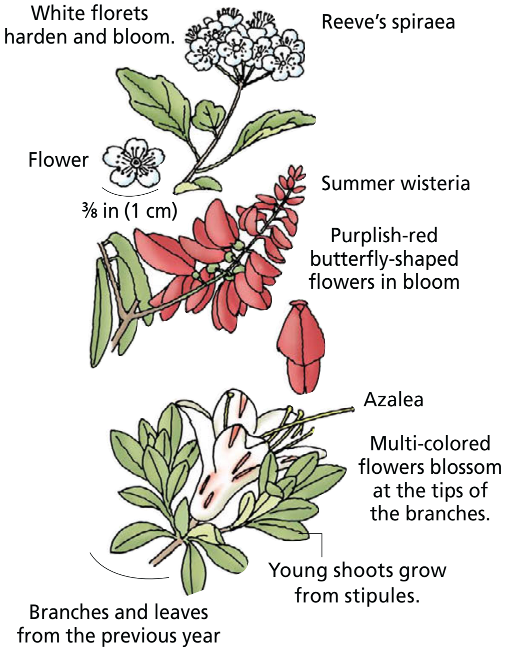


Spray pesticide with a sprayer.

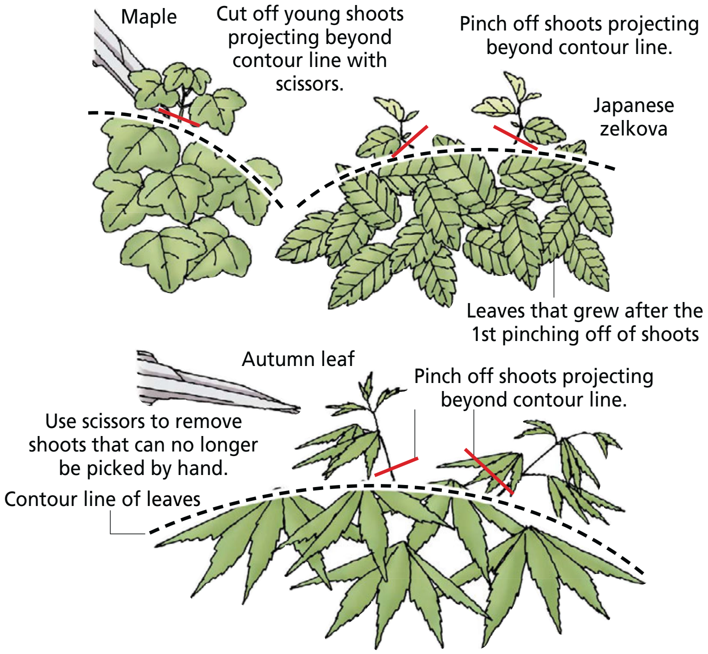
Wear rubber gloves.

Diluted pesticide

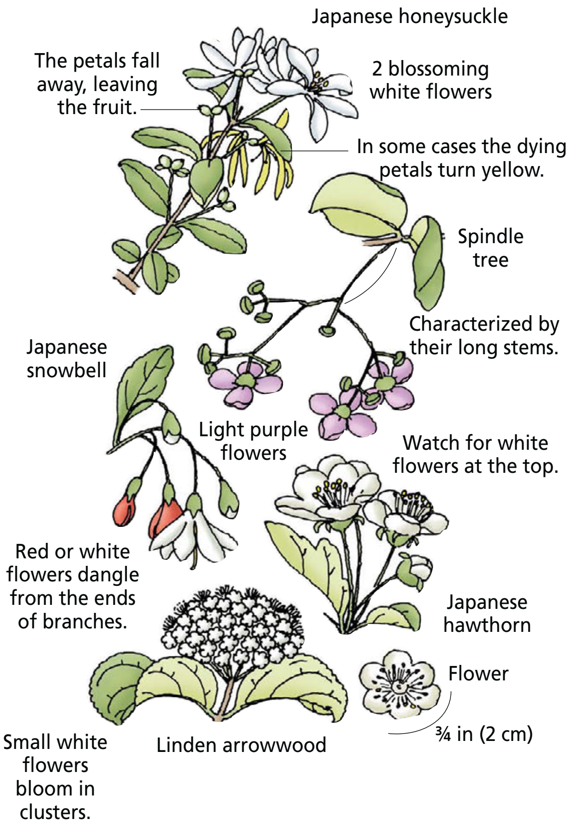
Flowering trees: Flowering


White florets
harden and bloom.
Reeve's spiraea
Flower
⅜ in (1 cm)
Summer wisteria
Purplish-red
butterfly-shaped
flowers in bloom
Azalea
Multi-colored
flowers blossom
at the tips of
the branches.
Young shoots grow
from stipules.
Branches and leaves
from the previous year

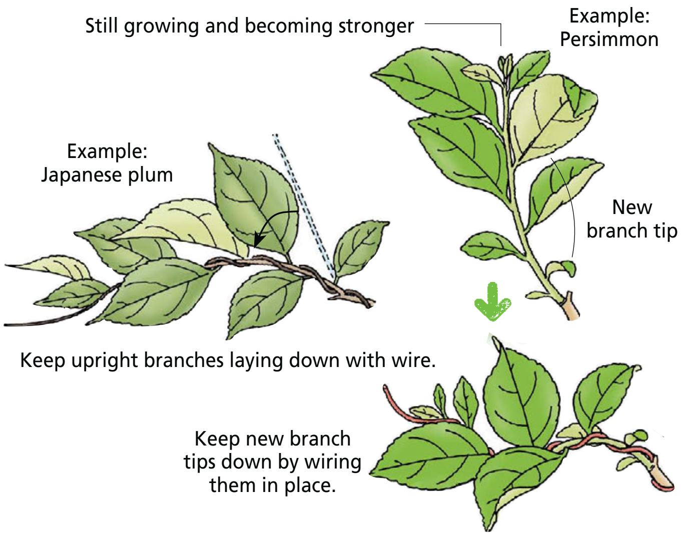
Leafy trees: Second bud picking

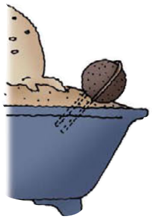

Maple
Cut off young shoots
projecting beyond
contour line with
scissors.
Pinch off shoots projecting
beyond contour line.
Japanese
zelkova
Leaves that grew after the
1st pinching off of shoots
Autumn leaf
Pinch off shoots projecting
beyond contour line.
Use scissors to remove
shoots that can no longer
be picked by hand.
Contour line of leaves

Fruiting trees: Flowering


Japanese honeysuckle
The petals fall
away, leaving
the fruit.
2 blossoming
white flowers
In some cases the dying
petals turn yellow.
Spindle
tree
Characterized by
their long stems.
Japanese
snowbell
Light purple
flowers
Watch for white
flowers at the top.
Red or white
flowers dangle
from the ends
of branches.
Japanese
hawthorn
Flower
¾ in (2 cm)
Small white
flowers
bloom in
clusters.
Linden arrowwood

Controlling shoots


Still growing and becoming stronger
Example:
Persimmon
Example:
Japanese plum
New
branch tip
Keep upright branches laying down with wire.
Keep new branch
tips down by wiring
them in place.



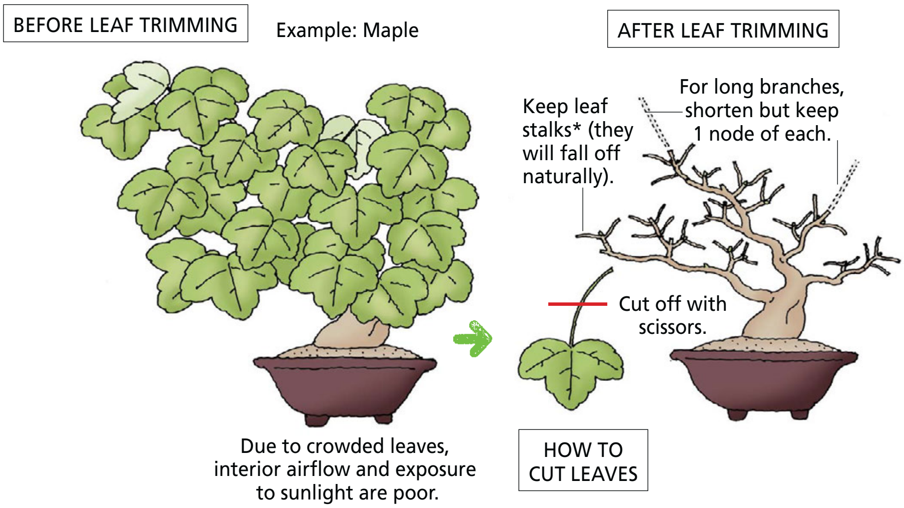
Adding fertilizer

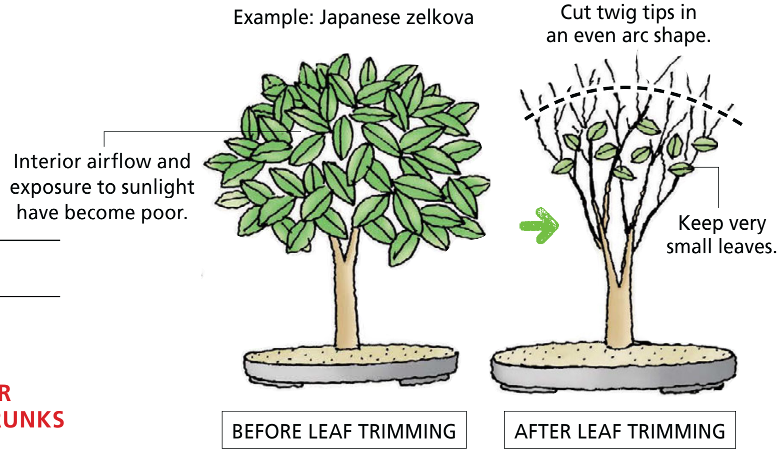
Fertilize around the edge of the pot
(use fertilizer pellets).

June

- ☑ Leafy trees: Leaf trimming
- ☑ Air-layering
- ☑ Cross-pollinating *Ilex serrata*
- ☑ Trimming shoots on black pine
- ☑ Flowering trees: Pruning after flowering, managing and nurturing bonsai during flowering
- ☑ Managing and nurturing bonsai during extended poor weather

Leafy trees: Leaf trimming


BEFORE LEAF TRIMMING
Example: Maple
AFTER LEAF TRIMMING
Keep leaf stalks* (they will fall off naturally).
For long branches, shorten but keep 1 node of each.
Cut off with scissors.
Due to crowded leaves, interior airflow and exposure to sunlight are poor.
HOW TO CUT LEAVES

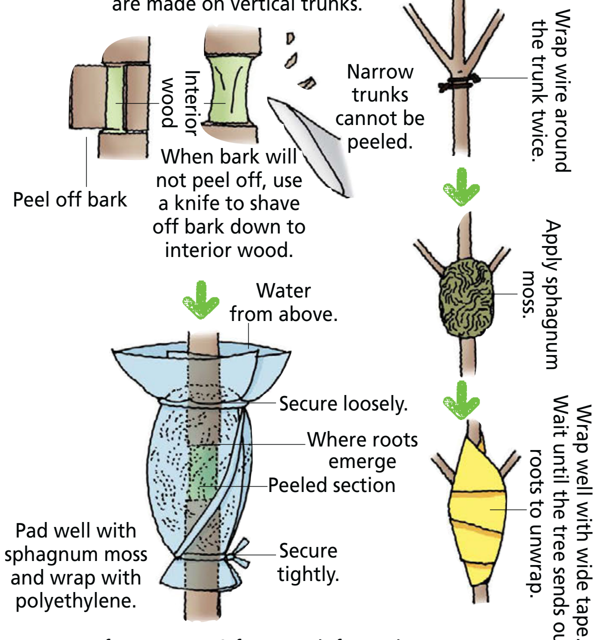

Example: Japanese zelkova
Cut twig tips in an even arc shape.
Interior airflow and exposure to sunlight have become poor.
Keep very small leaves.
BEFORE LEAF TRIMMING
AFTER LEAF TRIMMING

Air-layering

ANNULAR PEELING (CUTTING AND PEELING A RING OF BARK)

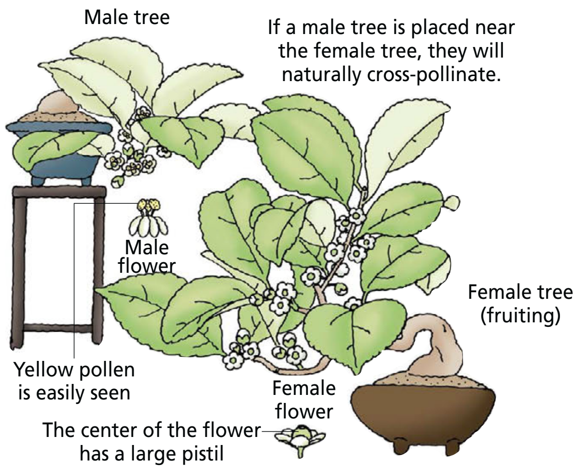
FOR THIN TRUNKS

Circular cuts, top and bottom, are made on vertical trunks.


Interior wood
Peel off bark
When bark will not peel off, use a knife to shave off bark down to interior wood.
Narrow trunks cannot be peeled.
Wrap wire around the trunk twice.
Apply sphagnum moss.
Wrap well with wide tape. Wait until the tree sends out roots to unwrap.
Water from above.
Secure loosely.
Where roots emerge
Peeled section
Pad well with sphagnum moss and wrap with polyethylene.
Secure tightly.

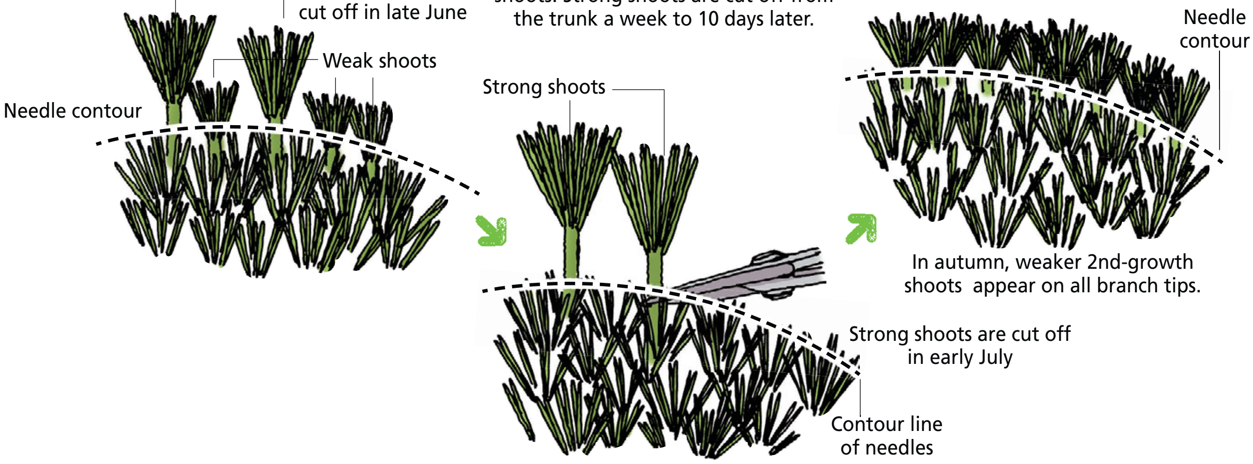
Refer to page 19 for more information.

Cross-pollinating *Ilex serrata*


Male tree
If a male tree is placed near the female tree, they will naturally cross-pollinate.
Male flower
Female tree (fruiting)
Yellow pollen is easily seen
Female flower
The center of the flower has a large pistil

**Leaf stalks or petioles: The stem attached to the leaf that serves as a conduit for sap. Refer to page 191.*

Trimming shoots on black pine (late June)


Strong shoots
Weak shoots are cut off in late June
Weak shoots
Needle contour
Strong shoots
THE CONDITION IN AUTUMN
Needle contour
Contour line of needles

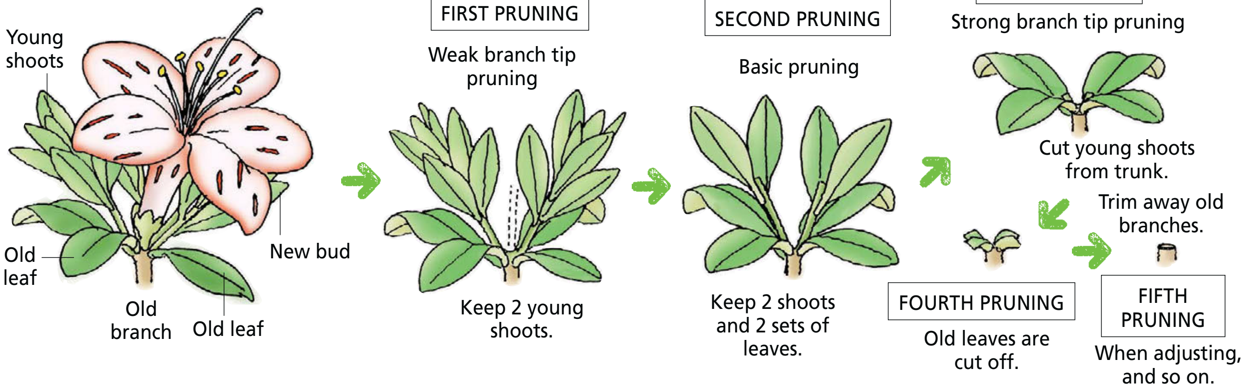
The objective is to cut off any weak shoots. Strong shoots are cut off from the trunk a week to 10 days later.

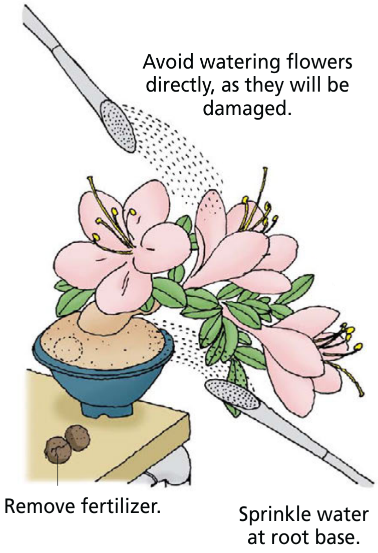
Strong shoots are cut off in early July

In autumn, weaker 2nd-growth shoots appear on all branch tips.

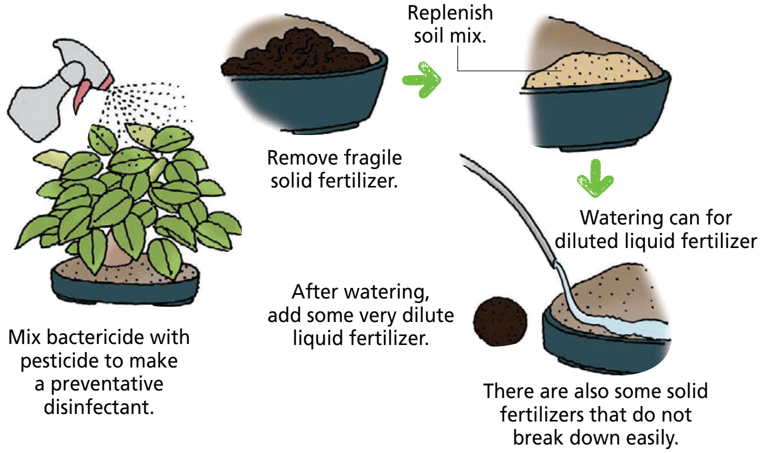
Flowering trees: Pruning after flowering, managing and nurturing bonsai during flowering

Example: Azalea


Young shoots
Old leaf
New bud
Old branch
Old leaf
FIRST PRUNING
Weak branch tip pruning
Keep 2 young shoots.
SECOND PRUNING
Basic pruning
Keep 2 shoots and 2 sets of leaves.
THIRD PRUNING
Strong branch tip pruning
Cut young shoots from trunk.
Trim away old branches.
FOURTH PRUNING
Old leaves are cut off.
FIFTH PRUNING
When adjusting, and so on.


Avoid watering flowers directly, as they will be damaged.
Remove fertilizer.
Sprinkle water at root base.

Managing and nurturing bonsai during extended poor weather


Replenish soil mix.
Remove fragile solid fertilizer.
Watering can for diluted liquid fertilizer

Mix bactericide with pesticide to make a preventative disinfectant.

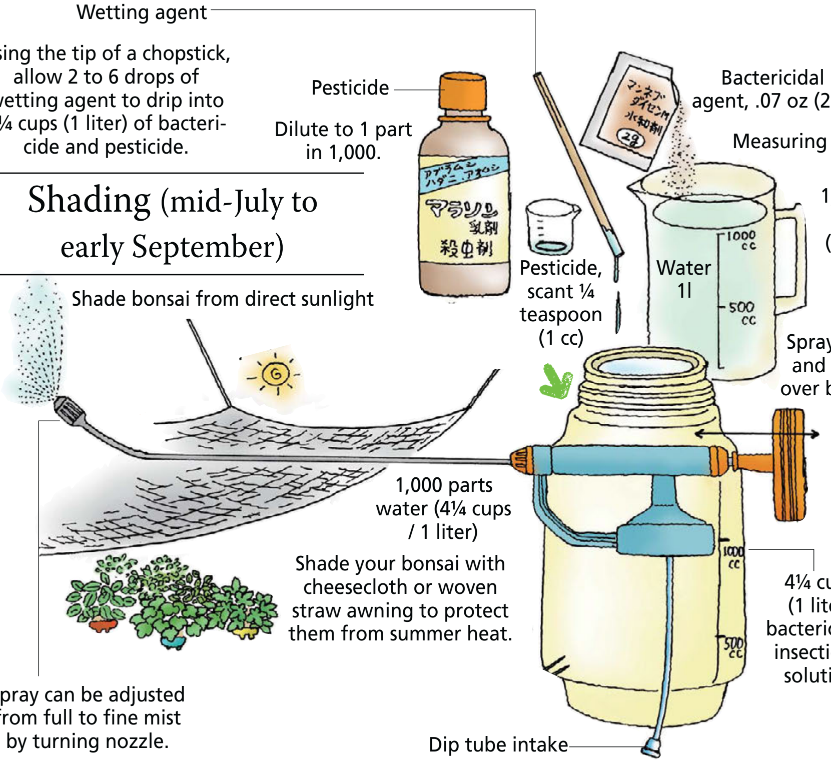
After watering, add some very dilute liquid fertilizer.

There are also some solid fertilizers that do not break down easily.

July

- ☑ Preparing bactericide and pesticide spray
- ☑ Shading
- ☑ Pest control
- ☑ Managing and nurturing bonsai during extended poor weather
- ☑ Wiring long branches
- ☑ Bud trimming for black pine
- ☑ Replanting stem-cutting shoots

Preparing bactericide and pesticide spray



Wetting agent

Using the tip of a chopstick, allow 2 to 6 drops of wetting agent to drip into 4¼ cups (1 liter) of bactericide and pesticide.

Pesticide

Dilute to 1 part in 1,000.

Bactericidal agent, .07 oz (2 g)

Measuring cup

1,000 parts water (4¼ cups / 1 liter)

Pesticide, scant ¼ teaspoon (1 cc)

Water 1l

Spray back and forth over bonsai.

1,000 parts water (4¼ cups / 1 liter)

4¼ cups (1 liter) bactericide / insecticide solution

Dip tube intake

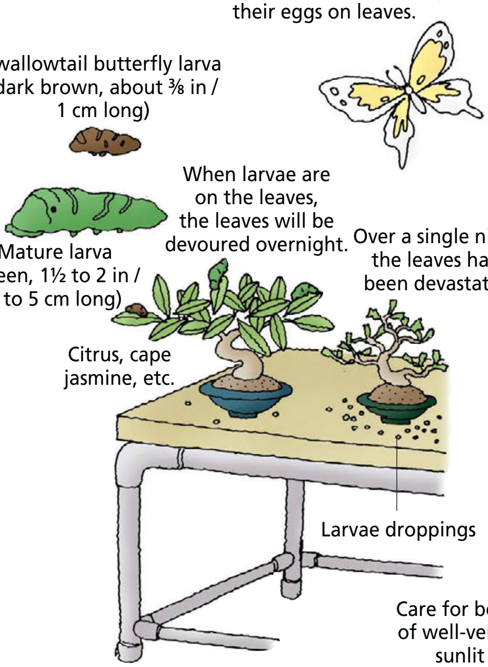
Shading (mid-July to early September)

Shade bonsai from direct sunlight

Shade your bonsai with cheesecloth or woven straw awning to protect them from summer heat.

Spray can be adjusted from full to fine mist by turning nozzle.

Pest control



Beware of swallowtail butterflies flying near bonsai. They lay their eggs on leaves.

Swallowtail butterfly larva (dark brown, about ⅜ in / 1 cm long)

Mature larva (green, 1½ to 2 in / 4 to 5 cm long)

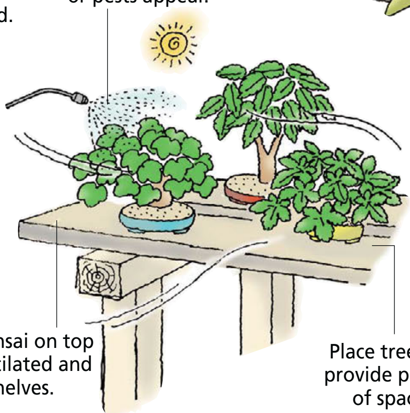
When larvae are on the leaves, the leaves will be devoured overnight.

Over a single night, the leaves have been devastated.

Citrus, cape jasmine, etc.

Larvae droppings

PREVENTATIVE MEASURES

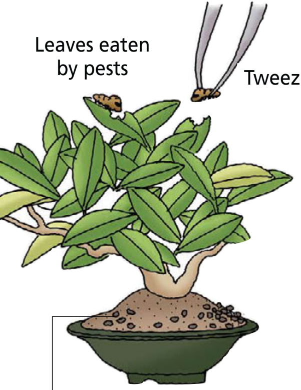


Try to use preventative disinfectant on bonsai before disease or pests appear.

Care for bonsai on top of well-ventilated and sunlit shelves.

Place trees to provide plenty of space between them.

REMOVING LARVAE



Leaves eaten by pests

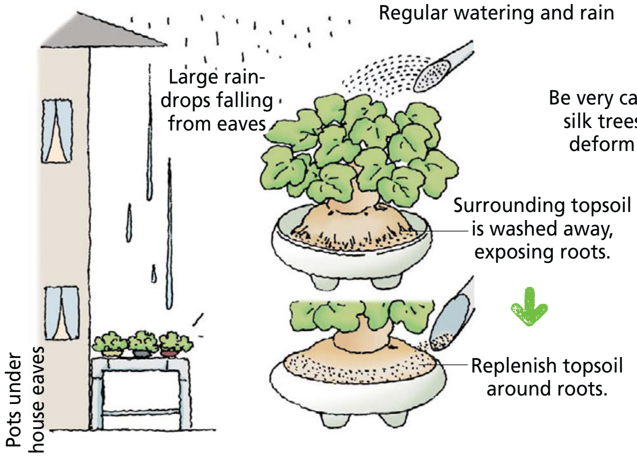
Tweezers

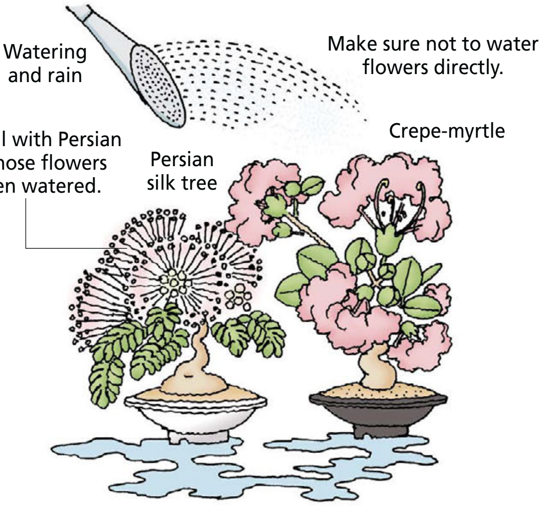
Citrus tree

If you find dark brown droppings on top of the soil, be cautious.

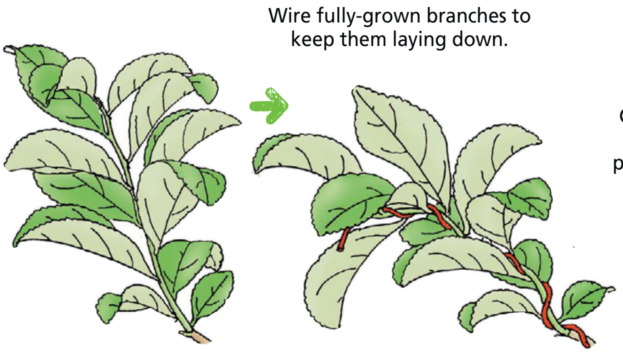
Managing and nurturing bonsai during extended poor weather

REPLENISHING TOPSOIL

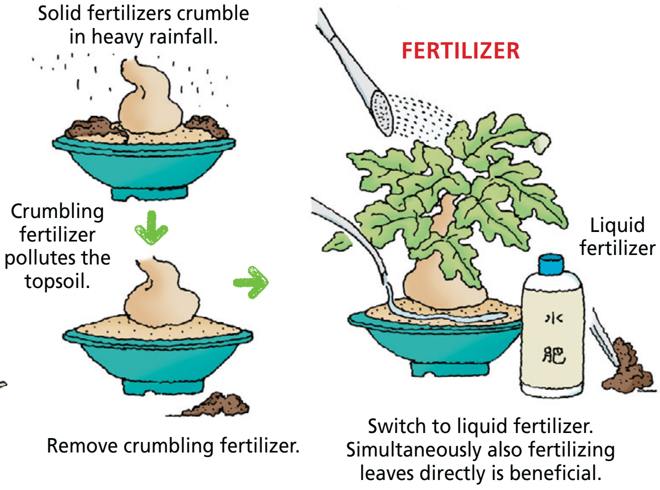

Regular watering and rain
Large raindrops falling from eaves
Surrounding topsoil is washed away, exposing roots.
Replenish topsoil around roots.
Pots under house eaves


Watering and rain
Make sure not to water flowers directly.
Be very careful with Persian silk trees, whose flowers deform when watered.
Persian silk tree
Crepe-myrtle

Wiring long branches

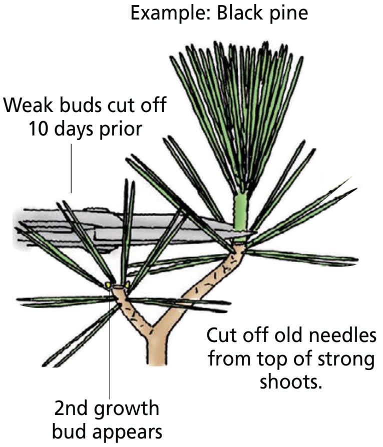

Wire fully-grown branches to keep them laying down.
Consider airflow and sunlight when wiring these branches

FERTILIZER

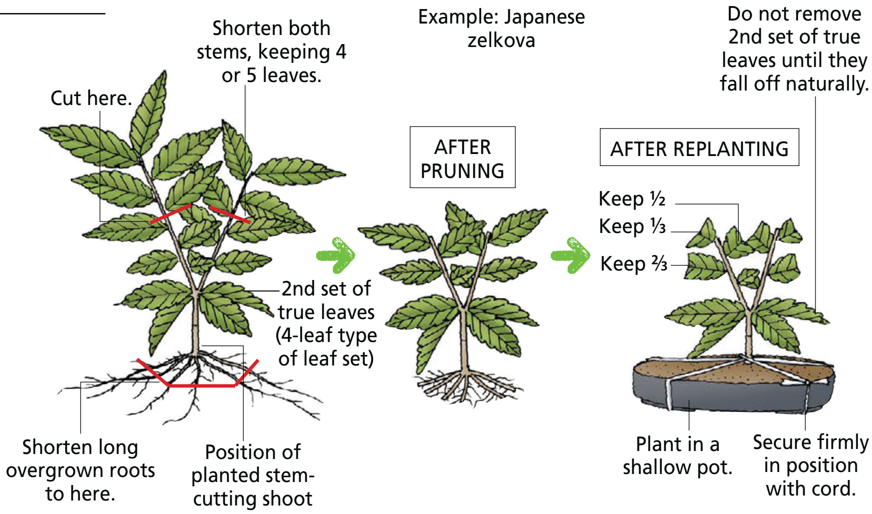

Solid fertilizers crumble in heavy rainfall.
Crumbling fertilizer pollutes the topsoil.
Remove crumbling fertilizer.
Liquid fertilizer
水
肥
Switch to liquid fertilizer. Simultaneously also fertilizing leaves directly is beneficial.

Bud trimming for black pine

(Strong Bud)


Example: Black pine
Weak buds cut off 10 days prior
Cut off old needles from top of strong shoots.
2nd growth bud appears

Replanting stem-cutting shoots


Shorten both stems, keeping 4 or 5 leaves.
Cut here.
Example: Japanese zelkova
Do not remove 2nd set of true leaves until they fall off naturally.
AFTER PRUNING
AFTER REPLANTING
Keep ½
Keep ⅓
Keep ⅔
2nd set of true leaves (4-leaf type of leaf set)
Shorten long overgrown roots to here.
Position of planted stem-cutting shoot
Plant in a shallow pot.
Secure firmly in position with cord.

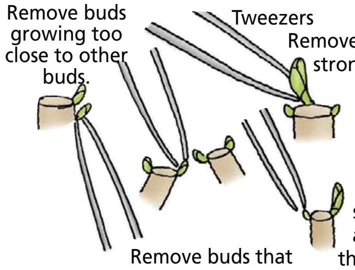
August

- ☑ Care & trimming of conifers
- ☑ Pinching off shoots
- ☑ Leafy bonsai: Care & trimming
- ☑ Flowering and fruiting bonsai: Care & trimming
- ☑ Leaf trimming
- ☑ Protecting against summertime dehydration
- ☑ Replanting Japanese white pine 1
- ☑ Replanting Japanese white pine II
- ☑ Watering the needles
- ☑ Protecting against storms
- ☑ Treating leaf burn
- ☑ Summer watering

Care & trimming of conifers

REMOVING BUDS (NEEDLES NOT SHOWN)

Example: Black pine



Remove buds growing too close to other buds.

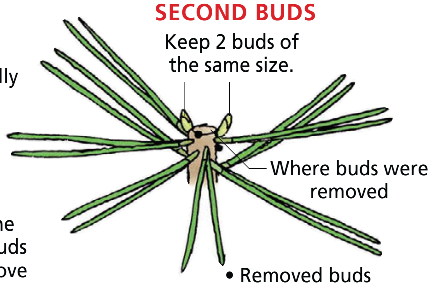
Tweezers

Remove especially strong buds.

Keep the strong buds and remove the weak ones.

Remove buds that grow into each other's space.

REMOVING SECOND BUDS

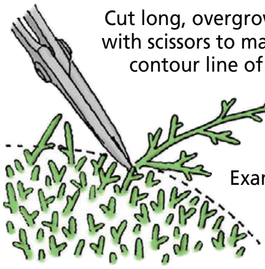


Keep 2 buds of the same size.

Where buds were removed

• Removed buds

Pinching off shoots

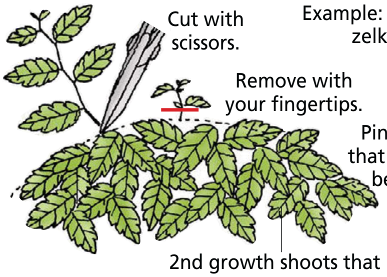


Cut long, overgrown shoots with scissors to maintain the contour line of leaves.

Example: Chinese juniper

Leafy bonsai: Care & trimming

PINCHING OFF SECOND GROWTH BUDS



Cut with scissors.

Example: Japanese zelkova

Remove with your fingertips.

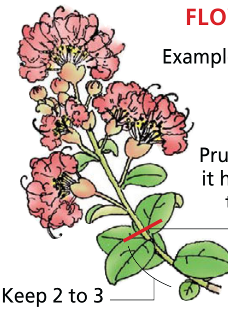
Pinch off shoots that are projecting beyond contour line of leaves.

2nd growth shoots that matured into leaves

Flowering and fruiting bonsai: Care & trimming

PRUNING AFTER FLOWERING

Example: Crepe-myrtle

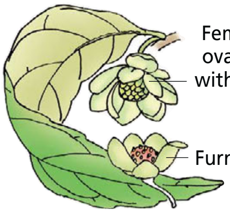


Prune back when it has flowered 7 times or so.

Keep 2 to 3 nodes.

CROSS-POLLINATING WHEN FLOWERING

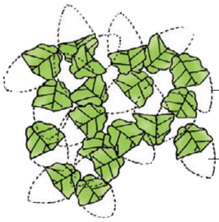
Example: Kadsura vine



Female flower (has light-green ovary). Bearing fruit is difficult without furnishing male flowers from another tree.

Furnish a male flower.

Leaf trimming



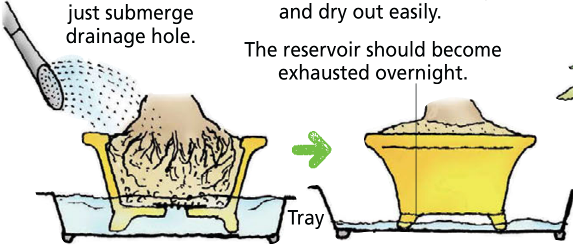
Example: Japanese beech

Improve airflow by trimming leaves when too crowded.

Protecting against summertime dehydration

WATER TRAYS

Very beneficial for wisteria, *Mimosa albizia* and willow, tree species that drain quickly and dry out easily.



Water level should just submerge drainage hole.

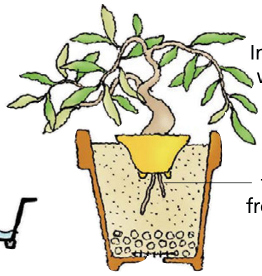
The reservoir should become exhausted overnight.

Tray

Discard water that has become too warm.

DOUBLE POTTING

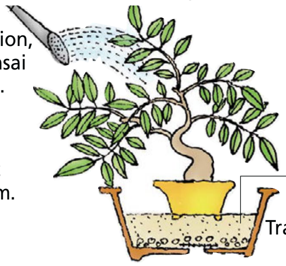
Setting the bonsai into a tall pot full of soil mix will reduce dehydration.



In either situation, water the bonsai from above.

Cut off roots that grow out from the bottom.

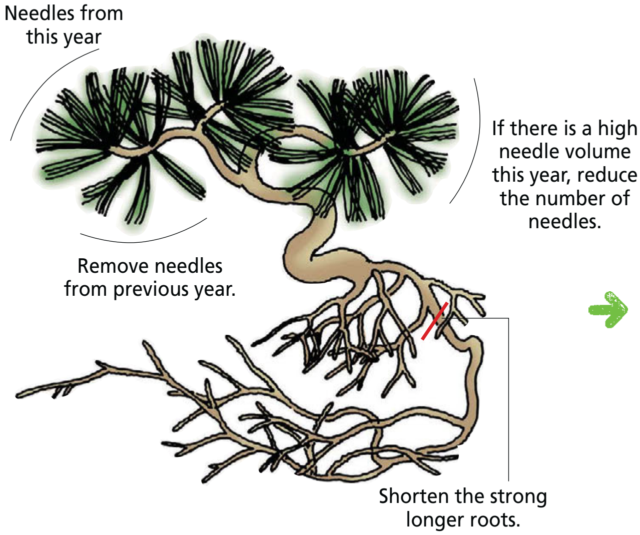
Filling a larger pot about half-full of soil mix and placing the bonsai on top will be just as effective as using a full tall pot.

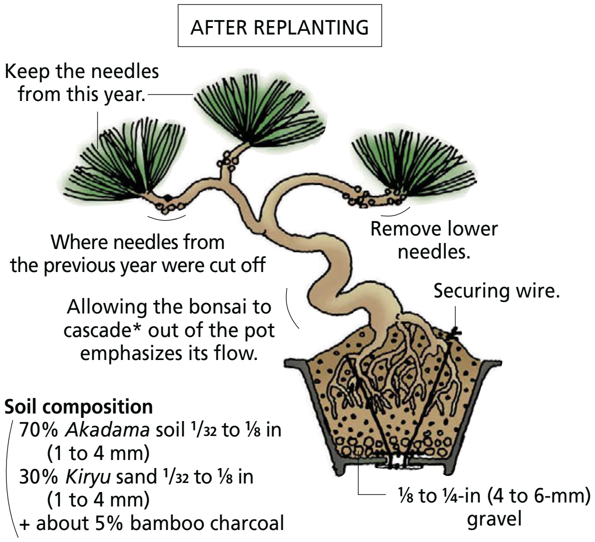


Soil

Training pot

Replanting Japanese white pine I


Needles from this year
If there is a high needle volume this year, reduce the number of needles.
Remove needles from previous year.
Shorten the strong longer roots.


AFTER REPLANTING
Keep the needles from this year.
Where needles from the previous year were cut off
Remove lower needles.
Securing wire.
Allowing the bonsai to cascade* out of the pot emphasizes its flow.
⅛ to ¼-in (4 to 6-mm) gravel

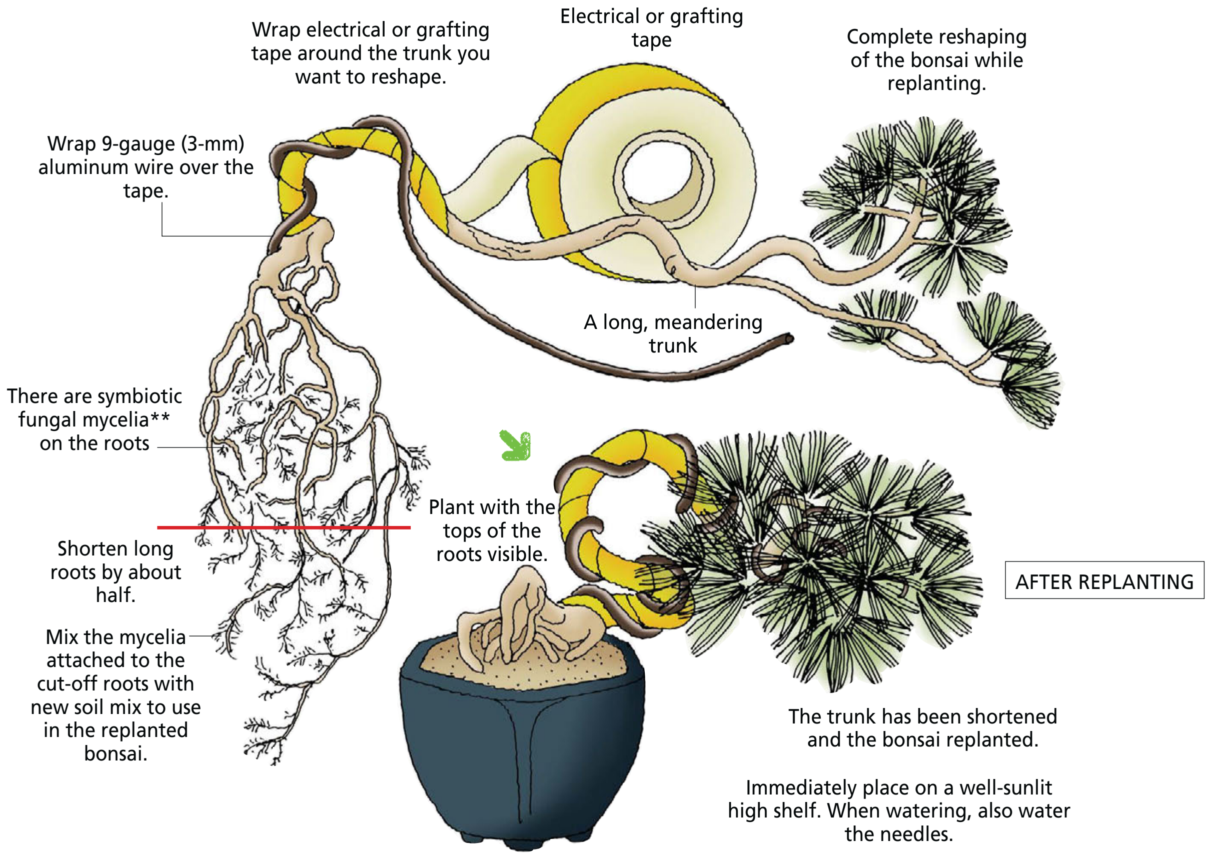
Soil composition

70% *Akadama* soil 1/32 to ⅛ in (1 to 4 mm)

30% *Kiryu* sand 1/32 to ⅛ in (1 to 4 mm)

+ about 5% bamboo charcoal

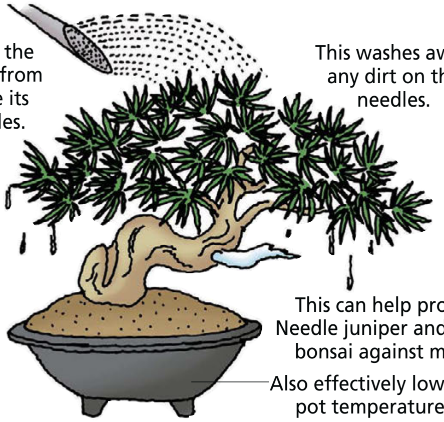
Replanting Japanese white pine II


Wrap electrical or grafting tape around the trunk you want to reshape.
Electrical or grafting tape
Complete reshaping of the bonsai while replanting.
Wrap 9-gauge (3-mm) aluminum wire over the tape.
A long, meandering trunk
There are symbiotic fungal mycelia** on the roots
Shorten long roots by about half.
Mix the mycelia attached to the cut-off roots with new soil mix to use in the replanted bonsai.
Plant with the tops of the roots visible.
AFTER REPLANTING
The trunk has been shortened and the bonsai replanted.
Immediately place on a well-sunlit high shelf. When watering, also water the needles.

**A semi-cascade pot bonsai: A bonsai term for describing when the leaves and branches of a bonsai jut out and appear to be spilling out of the pot.*

***Symbiotic fungal mycelia: Fungi that have a symbiotic relationship with trees and plants, propagating in the rhizosphere and root cells of plants, giving nitrogen to plants, and from trees, receiving carbohydrates and so on.*

Watering the needles



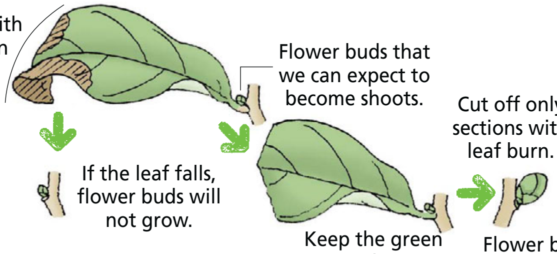
Water the bonsai from above its needles.

This washes away any dirt on the needles.

This can help protect Needle juniper and other bonsai against mites.

Also effectively lowers pot temperature

Treating leaf burn



Section with leaf burn

Flower buds that we can expect to become shoots.

If the leaf falls, flower buds will not grow.

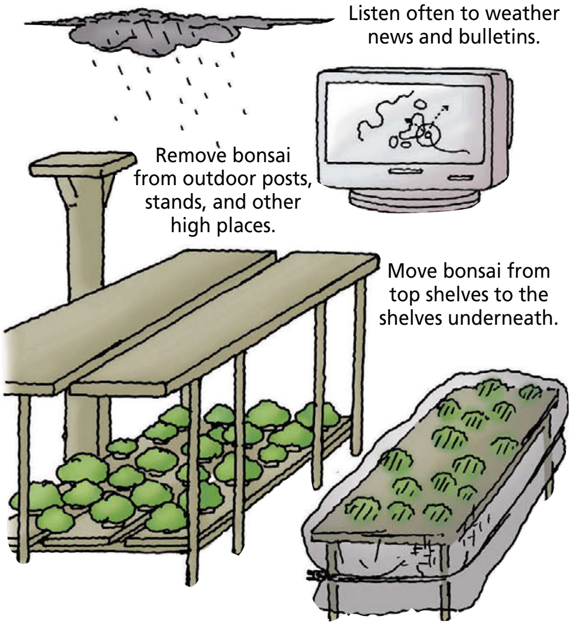
Keep the green portions.

Cut off only sections with leaf burn.

Flower buds may now grow.

Protecting against storms

Be cautious with strong winds and heavy rain.



Listen often to weather news and bulletins.

Remove bonsai from outdoor posts, stands, and other high places.

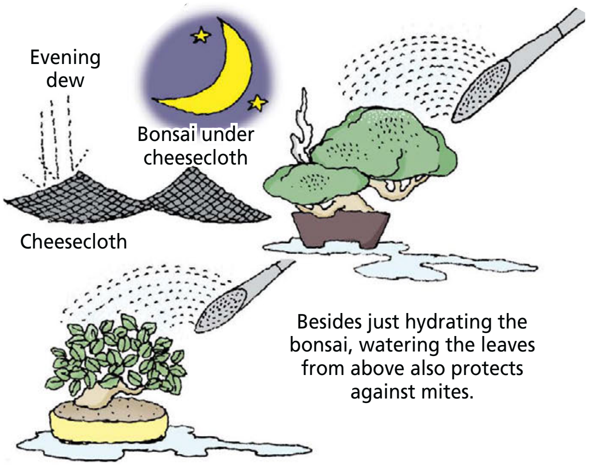
Move bonsai from top shelves to the shelves underneath.

If there is not enough time to move the plants, secure cheesecloth over bonsai.

Summer watering

AT NIGHT

IN THE DAYTIME



Evening dew

Bonsai under cheesecloth

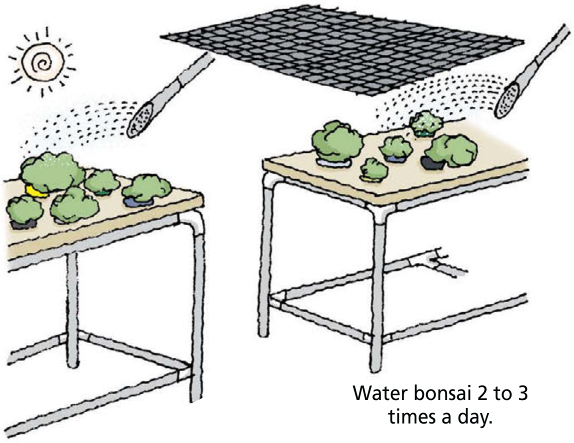
Cheesecloth

Watering the leaves compensates for scarce evening dew.

Besides just hydrating the bonsai, watering the leaves from above also protects against mites.

BONSAI IN DIRECT SUNLIGHT

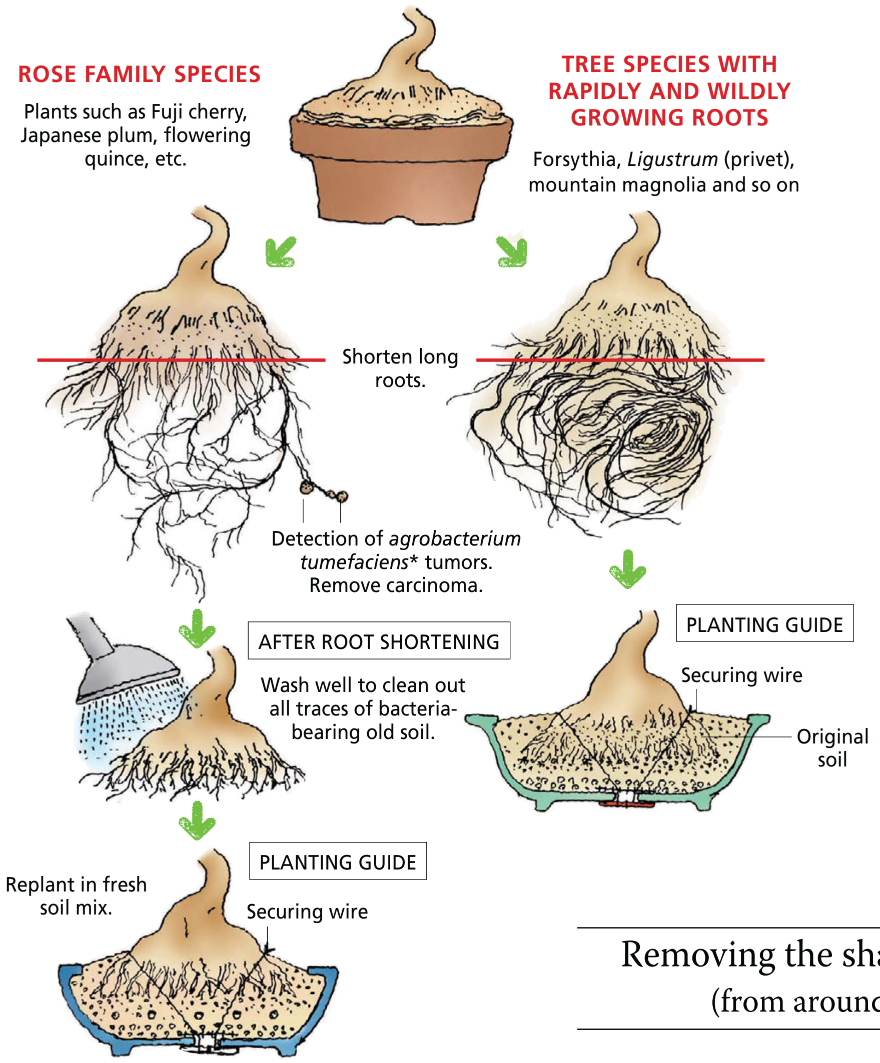
BONSAI IN THE SHADE



Water bonsai 4 to 5 times a day.

Water bonsai 2 to 3 times a day.

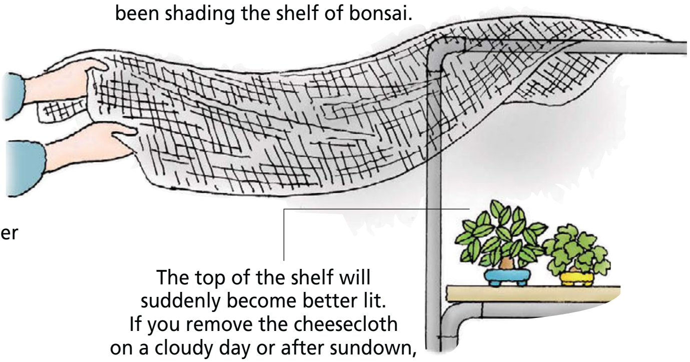
Replanting in autumn (from around mid-September)


ROSE FAMILY SPECIES
Plants such as Fuji cherry, Japanese plum, flowering quince, etc.
TREE SPECIES WITH RAPIDLY AND WILDLY GROWING ROOTS
Forsythia, *Ligustrum* (privet), mountain magnolia and so on
Shorten long roots.
Detection of *agrobacterium tumefaciens** tumors. Remove carcinoma.
AFTER ROOT SHORTENING
Wash well to clean out all traces of bacteria-bearing old soil.
PLANTING GUIDE
Securing wire
Original soil
Replant in fresh soil mix.
PLANTING GUIDE
Securing wire

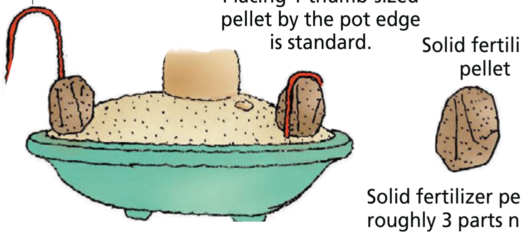
- ☑ Replanting in autumn
- ☑ Removing the shade from your bonsai
- ☑ Autumn fertilizer
- ☑ Responding to gall disease
- ☑ Transplanting
- ☑ Removing a new cutting from its layering assembly
- ☑ Replanting flowering quince
- ☑ Flowering bonsai: Treating long branches
- ☑ Fruiting bonsai: Leaf burn and flower buds
- ☑ Leafy bonsai: Pinching off buds
- ☑ Conifers: Removing old leaves

Removing the shade from your bonsai

(from around mid-September)


Remove the cheesecloth that had been shading the shelf of bonsai.
The top of the shelf will suddenly become better lit. If you remove the cheesecloth on a cloudy day or after sundown, the bonsai will more easily adapt to the increased light.

Autumn fertilizer


Secure fertilizer with U-shaped wire.
Placing 1 thumb-sized pellet by the pot edge is standard.
Solid fertilizer pellet

Use roughly 1 pellet of fertilizer for each no. 1 pot (3 pellets for no. 3 pots).

Solid fertilizer pellets are roughly 3 parts nitrogen, 5 parts phosphoric acid, to 2 parts potassium.

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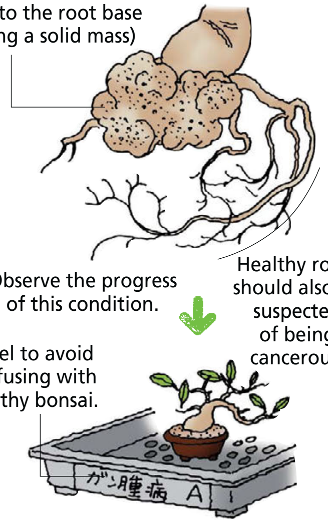
*Agrobacterium tumefaciens *(or "gall disease"): Plant disease caused by bacteria living in soil. A carcinoma that can form on roots, often metastasizing and spreading, causing debilitation in plants.*

Responding to gall disease

TREATING BONSAI IS IMPOSSIBLE



Agrobacterium tumefaciens grown into the root base (becoming a solid mass)

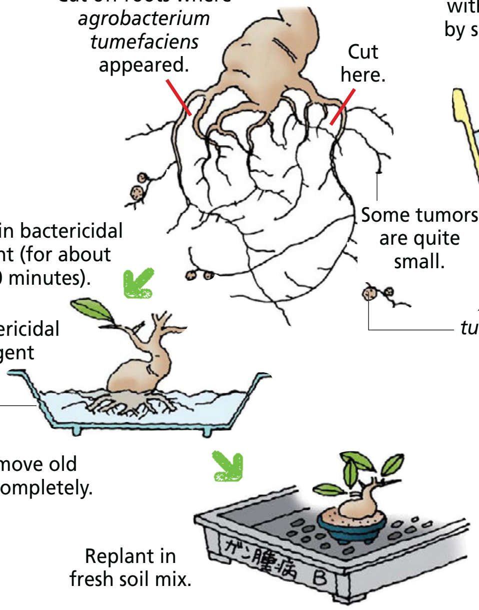
Observe the progress of this condition.

Healthy roots should also be suspected of being cancerous.

Label to avoid confusing with healthy bonsai.

Incinerate if withering continues.

TREATING BONSAI IS FEASIBLE



Cut off roots where *agrobacterium tumefaciens* appeared.

Cut here.

Some tumors are quite small.

Agrobacterium tumefaciens grown into the root.

Soak in bactericidal agent (for about 10 minutes).

Bactericidal agent

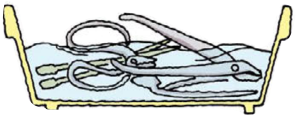
Remove old soil completely.

Replant in fresh soil mix.

Confirm absence of *agrobacterium tumefaciens* while replanting the following year.

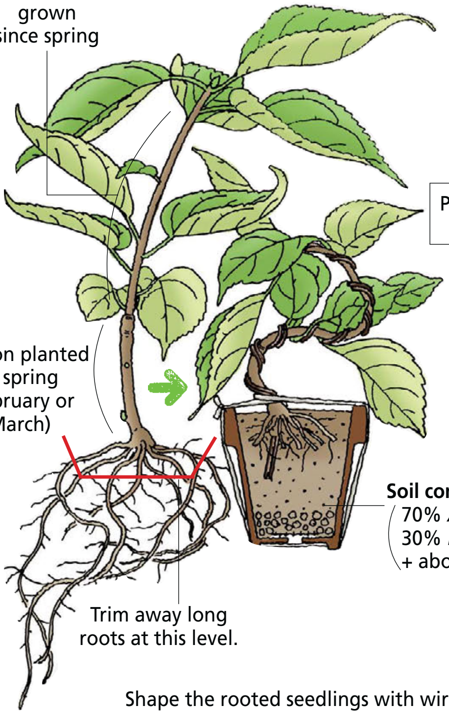
STERILIZING TOOLS

Sterilize tools that had contact with *agrobacterium tumefaciens* by soaking in alkaline (tri-sodium phosphate) solution.



Transplanting

Example: Fuji cherry



Part that has grown since spring

PLANTING GUIDE

Section planted in spring (February or March)

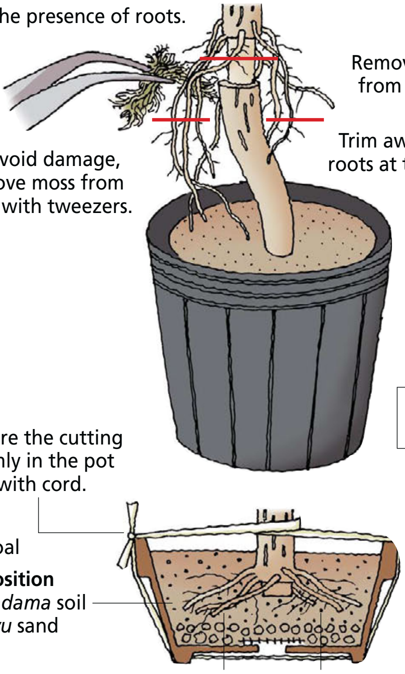
Soil composition
70% *Akadama* soil
30% *Kiryu* sand
+ about 5% bamboo charcoal

Trim away long roots at this level.

Shape the rooted seedlings with wire and one by one transplant into training pots.

Removing a new cutting from its layering assembly

Remove polyethylene, and remove moss after confirming the presence of roots.



Remove cutting from layering.

Trim away long roots at this level.

To avoid damage, remove moss from roots with tweezers.

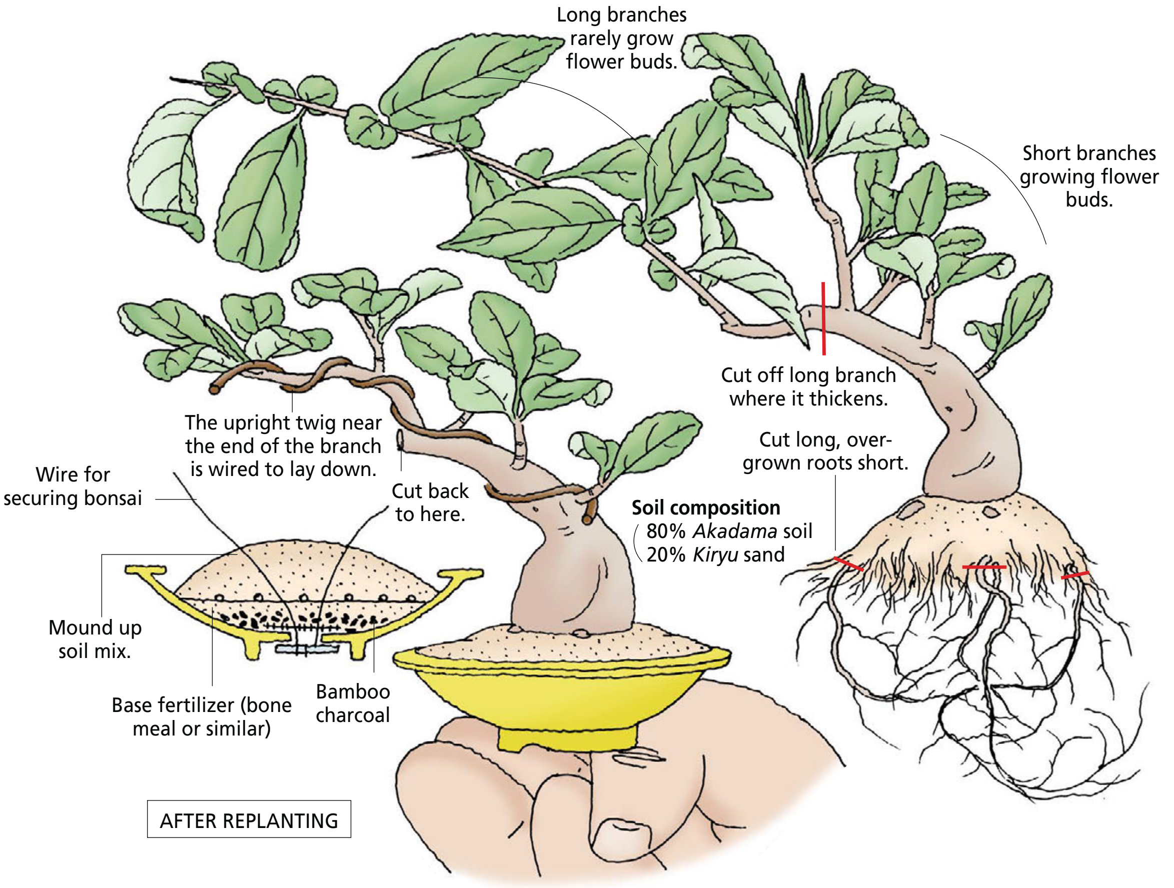
PLANTING GUIDE

Secure the cutting firmly in the pot with cord.

Soil composition
80% *Akadama* soil
20% *Kiryu* sand

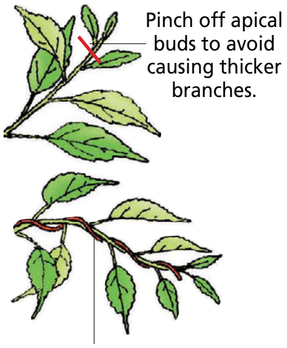
Plant the cutting with its roots spread out.

Replanting flowering quince


Long branches rarely grow flower buds.
Short branches growing flower buds.
Cut off long branch where it thickens.
Cut long, over-grown roots short.
Soil composition
80% *Akadama* soil
20% *Kiryu* sand
The upright twig near the end of the branch is wired to lay down.
Wire for securing bonsai
Cut back to here.
Mound up soil mix.
Base fertilizer (bone meal or similar)
Bamboo charcoal
AFTER REPLANTING

Flowering bonsai: Treating long branches

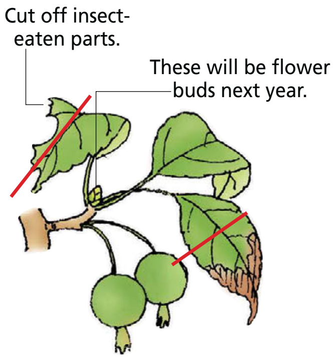
Example: Fuji cherry


Pinch off apical buds to avoid causing thicker branches.

Laying down the branch with wire will reduce vigorous growth.

Fruiting bonsai: Leaf burn and flower buds

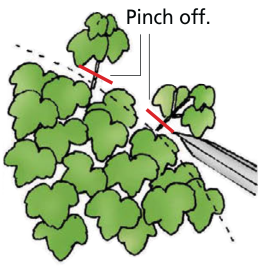
Example: Pear-leaf crabapple


Cut off insect-eaten parts.
These will be flower buds next year.

Cut off burnt sections of leaves and leave green portions.

Leafy bonsai: Pinching off buds

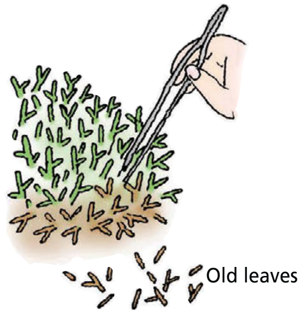
Example: Maple



Continue to snip off buds that project beyond contour line of leaves.

Conifers: Removing old leaves

Example: Chinese juniper

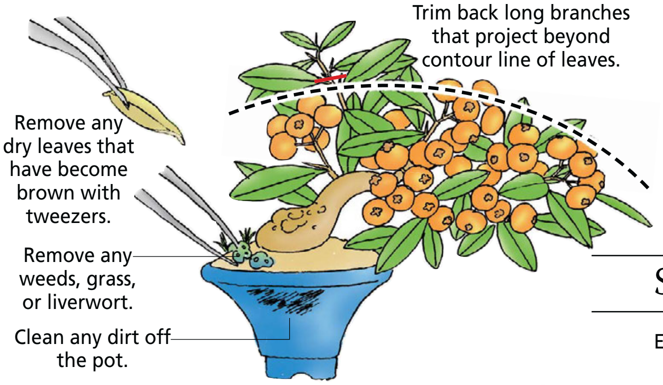


Use tweezers or similar to clean out old leaves that have turned brown.

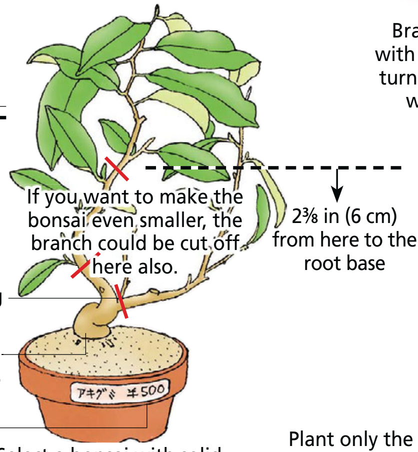
October

- ☑ **Care & trimming of bonsai on display at an exhibition**
- ☑ **How to decide which bonsai to purchase**
- ☑ **Seed collecting**
- ☑ **Preserving seeds**
- ☑ **Neutralizing acidified soil**
- ☑ **Ripened fruit: Gathering and preserving seeds**
- ☑ **Adding extra fertilizer**
- ☑ **Disinfecting**
- ☑ **Wiring**

Care & trimming of bonsai on display at an exhibition


Trim back long branches that project beyond contour line of leaves.
Example: Firethorns
Remove any dry leaves that have become brown with tweezers.
Remove any weeds, grass, or liverwort.
Clean any dirt off the pot.

How to decide which bonsai to purchase

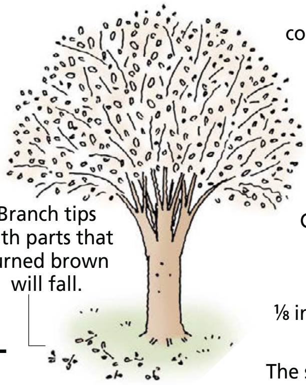

Select a bonsai with leaves and branches that can be trimmed and bearing robust buds.
If you want to make the bonsai even smaller, the branch could be cut off here also.
2⅜ in (6 cm) from here to the root base
Select the bonsai by assuming where it can be cut back.
Select a bonsai with a bend in its lower trunk.
Price is also a deciding factor, of course
アキグミ ¥500
Select a bonsai with solid rooting that is not shaky.

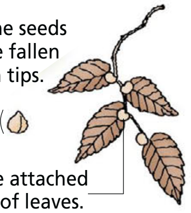
Seed collecting

Example: Japanese zelkova (around late October)

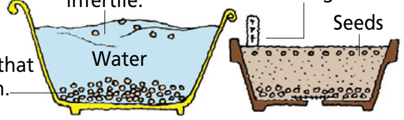
Trees with autumn colors in parks are good sources of seeds.

Depending on the year, there might be no seeds at all, but once every 3 to 4 years, there are many seeds on the branches.

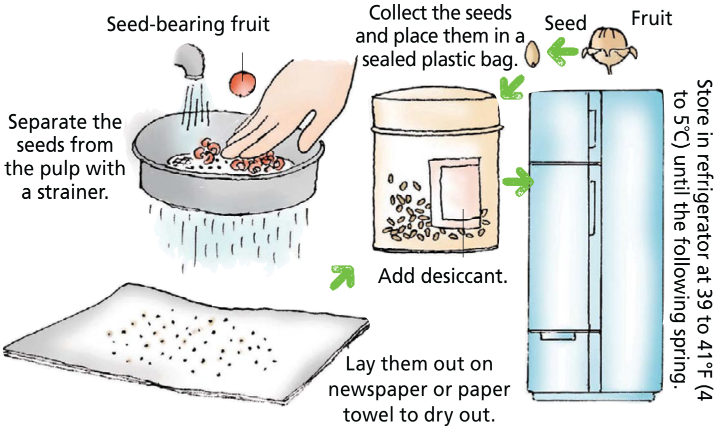

Branch tips with parts that turned brown will fall.


Collect the seeds from the fallen branch tips.
⅛ in (5 mm)
The seeds are attached at the bases of leaves.

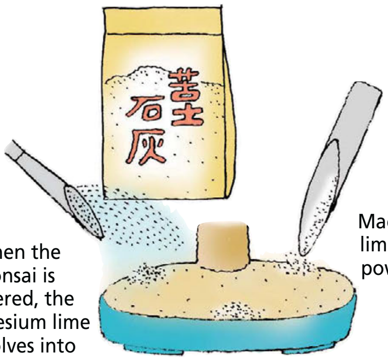
When storing seeds, keep in an envelope in a refrigerator until spring.


SORTING THE SEEDS
Floating seeds are infertile.
Water
Plant only the seeds that sink to the bottom.
SOWING THE SEEDS
Name tags
Seeds

Preserving seeds


Seed-bearing fruit
Separate the seeds from the pulp with a strainer.
Collect the seeds and place them in a sealed plastic bag.
Seed
Fruit
Add desiccant.
Store in refrigerator at 39 to 41°F (4 to 5°C) until the following spring.
Lay them out on newspaper or paper towel to dry out.

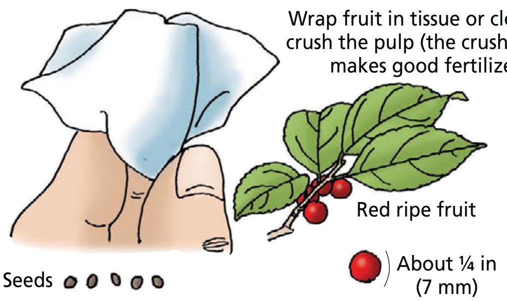
Neutralizing acidified soil


苦土石灰
When the bonsai is watered, the magnesium lime dissolves into the soil.
Magnesium lime (finely powdered)
Leave magnesium lime in 2 to 3 places around the pot rim.

**Neutralizing: In terms of chemical conditions, a pH level of 7. Ideal pH depends on the bonsai species, but most plants and trees prefer a slightly acidic pH of between 5 and 7. With a pH that becomes higher than 7 and thus more alkaline, deficiencies of trace elements such as iron and manganese and decreased absorption of phosphoric acid are likely to occur.*

Ripened fruit: Gathering and preserving seeds

Example: *Ilex serrata*



Wrap fruit in tissue or cloth and crush the pulp (the crushed pulp makes good fertilizer).

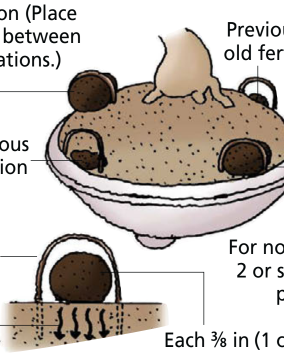
Red ripe fruit

Seeds

About ¼ in (7 mm)

Wash seeds well, dry them, place in paper envelope (or similar), and store in refrigerator until spring.

Adding extra fertilizer



Current location (Place new fertilizers between previous locations.)

Previous location (Leave old fertilizer where it is.)

Previous location

Current location

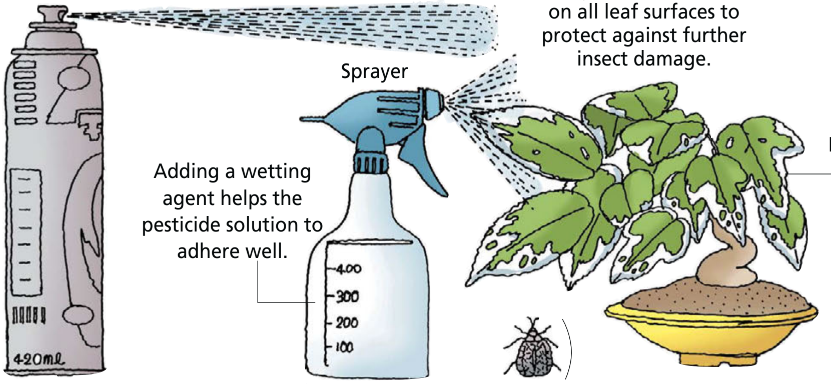
Secure fertilizer with U-shaped wire.

It slowly fertilizes from where it is placed.

For no. 2.5 pots (3 in / 7.5 cm), 2 or so solid fertilizer pellets per pot is standard.

Each ⅜ in (1 cm) solid fertilizer pellet contains 35% nitrogen, 50% phosphoric acid, and 15% potassium.

Disinfecting



Use aerosol disinfectant solutions at least 12 in (30 cm) away from bonsai.

Sprayer

Adding a wetting agent helps the pesticide solution to adhere well.

Spray diluted pesticide on all leaf surfaces to protect against further insect damage.

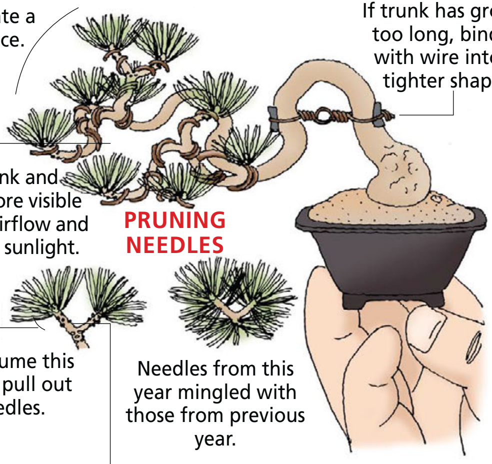
Example: Lace bug damage

Insect feeding damage causes leaf tips and surrounding areas to become whitish.

Lace bug (about ⅛ in / 3 mm)

Wiring

Example: Japanese white pine



Wire poorly-positioned branches into place to create a good balance.

If trunk has grown too long, bind it with wire into a tighter shape.

Make trunk and branches more visible to improve airflow and exposure to sunlight.

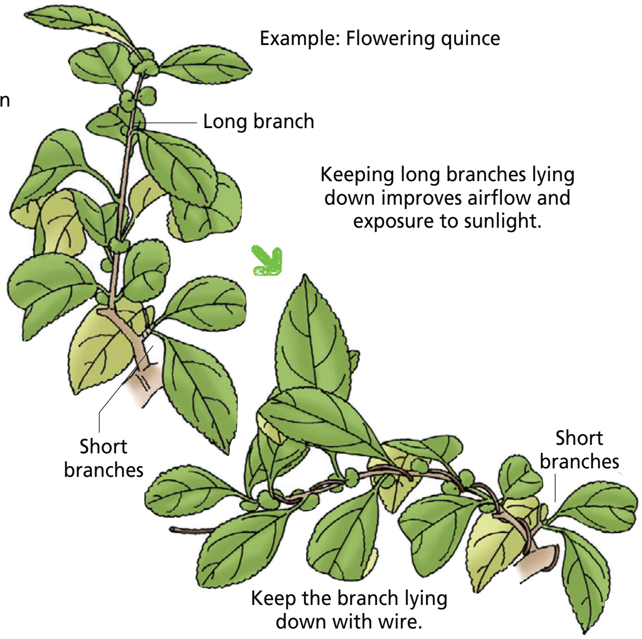
PRUNING NEEDLES

If needle volume this year is high, pull out lower needles.

Needles from this year mingled with those from previous year.

Pull out needles from previous year.

Example: Flowering quince



Long branch

Keeping long branches lying down improves airflow and exposure to sunlight.

Short branches

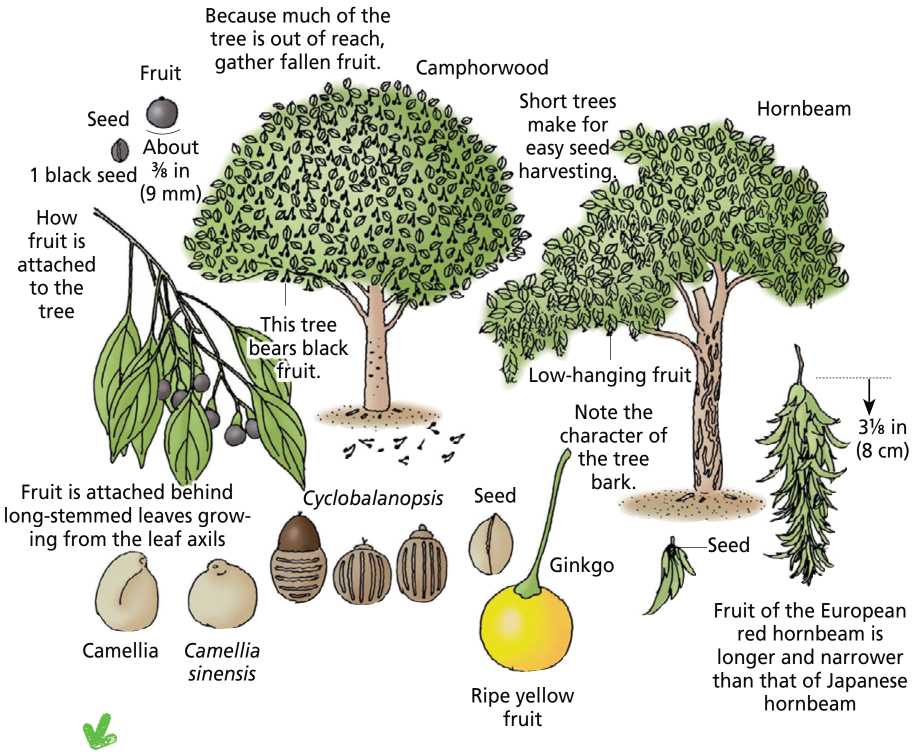
Short branches

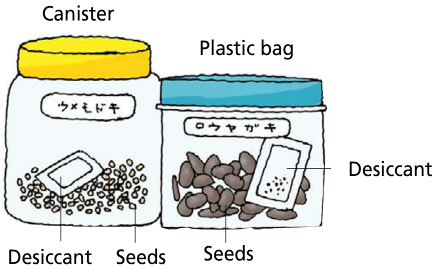
Keep the branch lying down with wire.

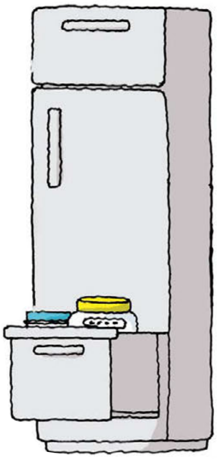
November

- ☑ Gathering and preserving seeds
- ☑ Protecting your bonsai from birds
- ☑ Gathering seeds from parks
- ☑ Care & trimming
- ☑ Removing old needles on conifers
- ☑ Citrus tree bonsai shelters
- ☑ Care & trimming when leaves have fallen

Gathering and preserving seeds (from trees in public parks and so on)

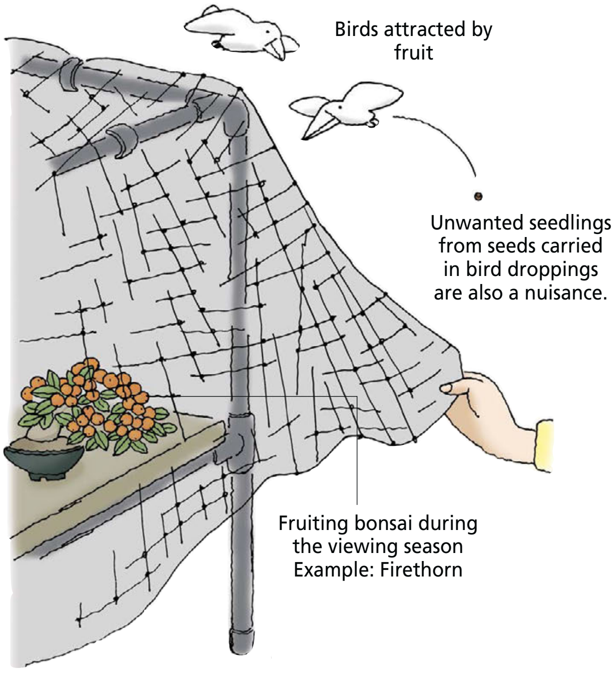

Because much of the tree is out of reach, gather fallen fruit.
Fruit
Seed
About ⅜ in (9 mm)
1 black seed
Camphorwood
Short trees make for easy seed harvesting.
Hornbeam
How fruit is attached to the tree
This tree bears black fruit.
Low-hanging fruit
Note the character of the tree bark.
3⅛ in (8 cm)
Fruit is attached behind long-stemmed leaves growing from the leaf axils
Cyclobalanopsis
Seed
Ginkgo
Seed
Camellia
Camellia sinensis
Ripe yellow fruit
Fruit of the European red hornbeam is longer and narrower than that of Japanese hornbeam


Canister
ウメモドキ
Plastic bag
ロウヤガキ
Desiccant
Desiccant
Seeds
Seeds



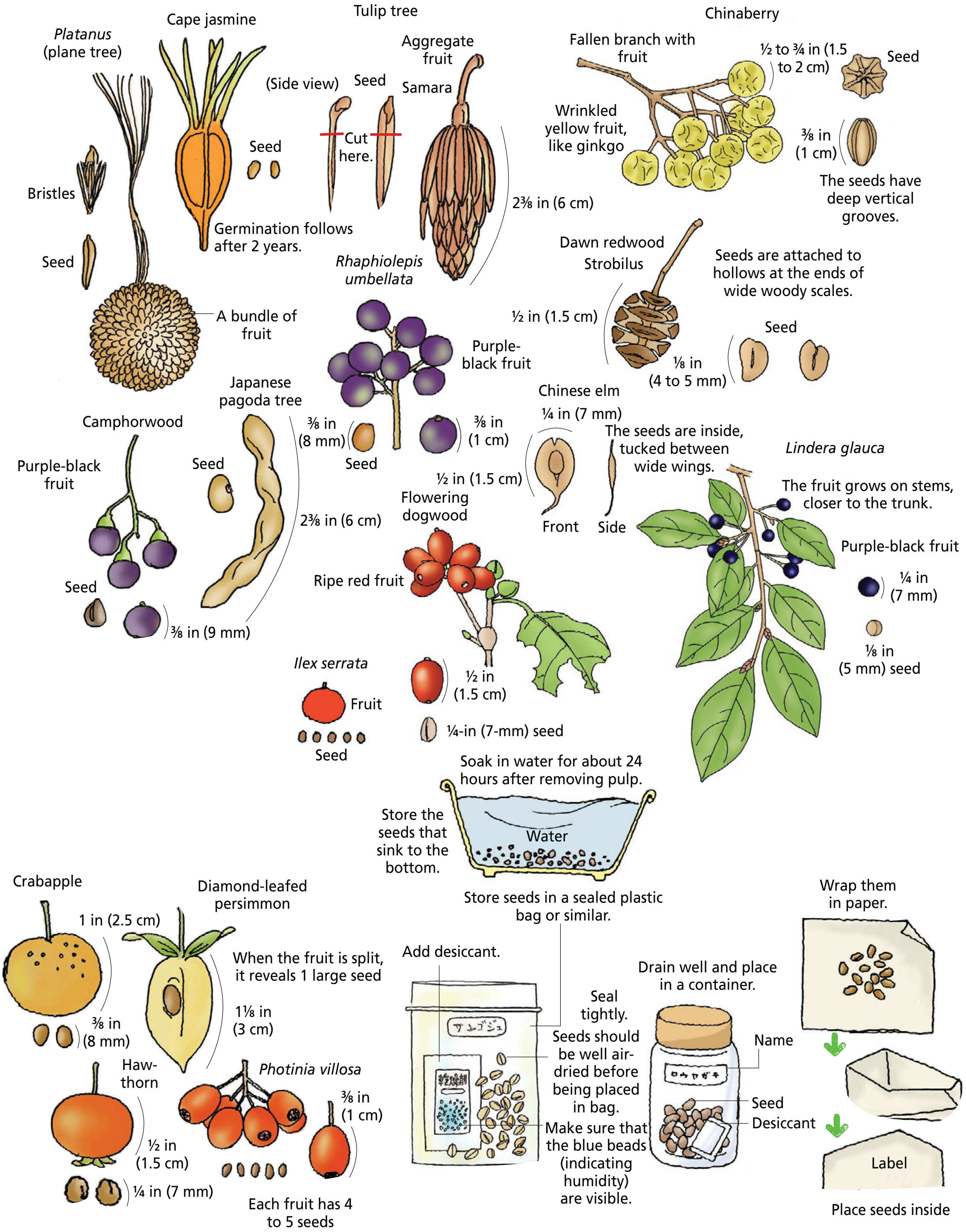
Store in refrigerator until spring

Protecting your bonsai from birds


Birds attracted by fruit
Unwanted seedlings from seeds carried in bird droppings are also a nuisance.
Fruiting bonsai during the viewing season
Example: Firethorn

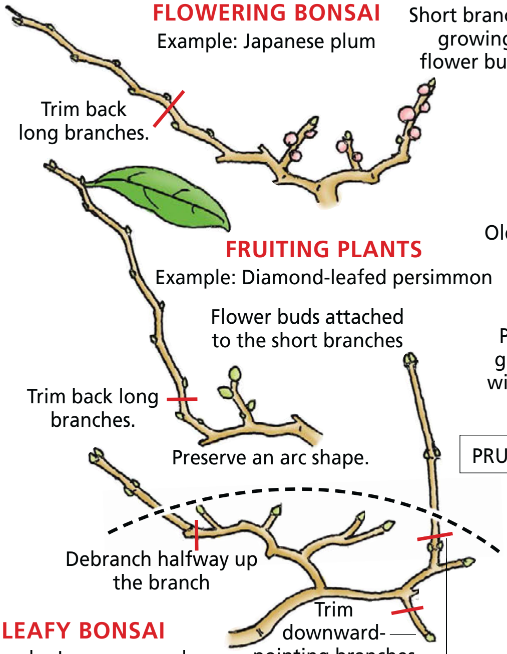
Shelter your bonsai under a coarsely-woven net to protect from bird predation.

Gathering seeds from parks


Platanus
(plane tree)
Bristles
Seed
A bundle of fruit
Cape jasmine
Seed
Germination follows after 2 years.
Tulip tree
(Side view)
Seed
Cut here.
Aggregate fruit
Samara
2⅜ in (6 cm)
Chinaberry
Fallen branch with fruit
Wrinkled yellow fruit, like ginkgo
½ to ¾ in (1.5 to 2 cm)
Seed
⅜ in (1 cm)
The seeds have deep vertical grooves.
Rhaphiolepis umbellata
Purple-black fruit
⅜ in (8 mm)
Seed
⅜ in (1 cm)
Dawn redwood
Strobilus
½ in (1.5 cm)
Seeds are attached to hollows at the ends of wide woody scales.
Seed
⅛ in (4 to 5 mm)
Camphorwood
Purple-black fruit
Seed
⅜ in (9 mm)
Japanese pagoda tree
Seed
2⅜ in (6 cm)
Chinese elm
¼ in (7 mm)
½ in (1.5 cm)
The seeds are inside, tucked between wide wings.
Front
Side
Lindera glauca
The fruit grows on stems, closer to the trunk.
Purple-black fruit
¼ in (7 mm)
⅛ in (5 mm) seed
Flowering dogwood
Ripe red fruit
½ in (1.5 cm)
¼-in (7-mm) seed
Ilex serrata
Fruit
Seed
Soak in water for about 24 hours after removing pulp.
Store the seeds that sink to the bottom.
Water
Crabapple
1 in (2.5 cm)
⅜ in (8 mm)
Diamond-leafed persimmon
When the fruit is split, it reveals 1 large seed
1⅛ in (3 cm)
Haw-thorn
½ in (1.5 cm)
¼ in (7 mm)
Photinia villosa
⅜ in (1 cm)
Each fruit has 4 to 5 seeds
Store seeds in a sealed plastic bag or similar.
Add desiccant.
Seal tightly.
Seeds should be well air-dried before being placed in bag.
Make sure that the blue beads (indicating humidity) are visible.
Drain well and place in a container.
Name
Seed
Desiccant
Wrap them in paper.
Label
Place seeds inside

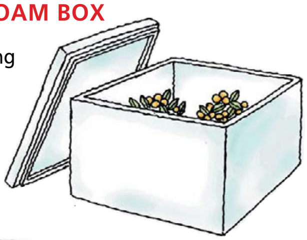
Wrapped in paper or in a sealed container, seeds are stored in a refrigerator (at around 60℉ / 5℃) until spring.

Care & trimming


FLOWERING BONSAI
Example: Japanese plum
Short branches growing flower buds.
Trim back long branches.
FRUITING PLANTS
Example: Diamond-leafed persimmon
Flower buds attached to the short branches
Trim back long branches.
Preserve an arc shape.
PRUNING
Debranch halfway up the branch
LEAFY BONSAI
Example: Japanese maple
Trim downward-pointing branches
Cut upraised sprouts short

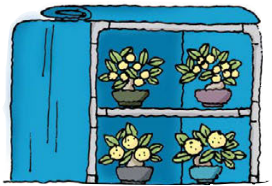
Citrus tree bonsai shelters

STYROFOAM BOX



Opening the cooler during daylight hours ensures that the bonsai receive adequate sunlight.

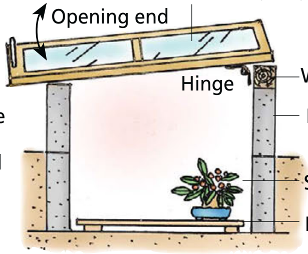
Close the cooler at night to protect the bonsai from frost.



SIMPLE SHELTER

Move bonsai into shelters or greenhouses before frost arrives.

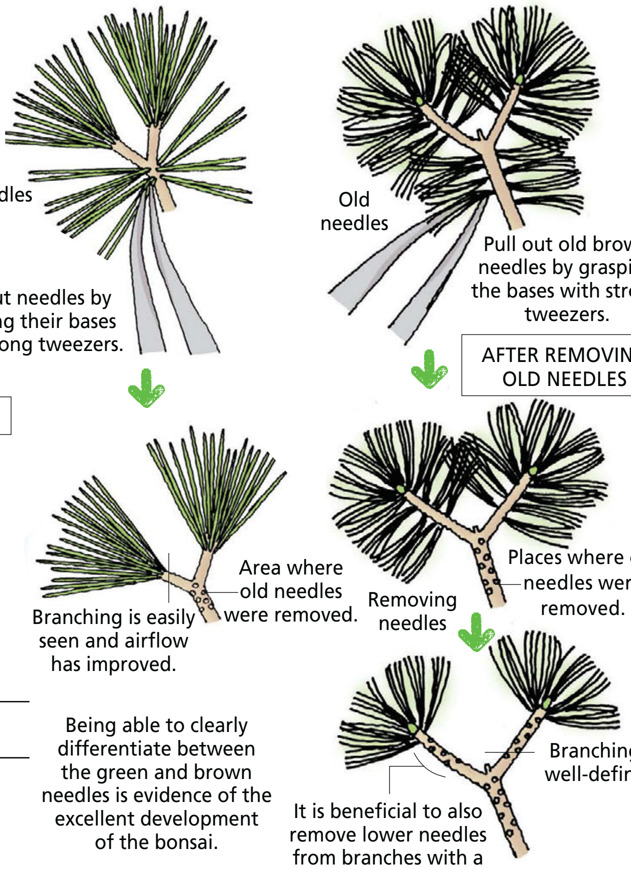
Hong Kong kumquat or other citrus bonsai.


Glass or polyethylene
Opening end
Hinge
Wood beam
Block
Ground level
Sheltering citrus bonsai
Lay a simple floor for drainage.

Move temperate climate trees, evergreens, and cold-intolerant bonsai into the shelter.

SEMI-BELOWGROUND BONSAI SHELTER

Removing old needles on conifers


Example: Black pine
Example: Japanese white pine
Old needles
Old needles
AFTER REMOVING OLD NEEDLES
Area where old needles were removed.
Removing needles
Places where old needles were removed.
Branching is well-defined.

Pull out needles by grasping their bases with strong tweezers.

Pull out old brown needles by grasping the bases with strong tweezers.

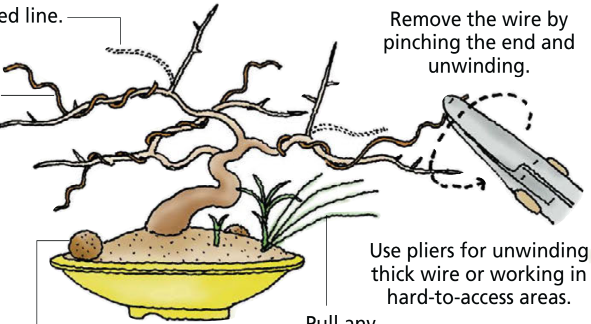
Branching is easily seen and airflow has improved.

Being able to clearly differentiate between the green and brown needles is evidence of the excellent development of the bonsai.

It is beneficial to also remove lower needles from branches with a high needle volume.

Care & trimming when leaves have fallen

(Wiring removal, wiring into position, weeding and fertilizing)



Wire any upright shoots down into position shown by the dotted line.

Take off the wiring that was placed in June.

Remove the wire by pinching the end and unwinding.

Use pliers for unwinding thick wire or working in hard-to-access areas.

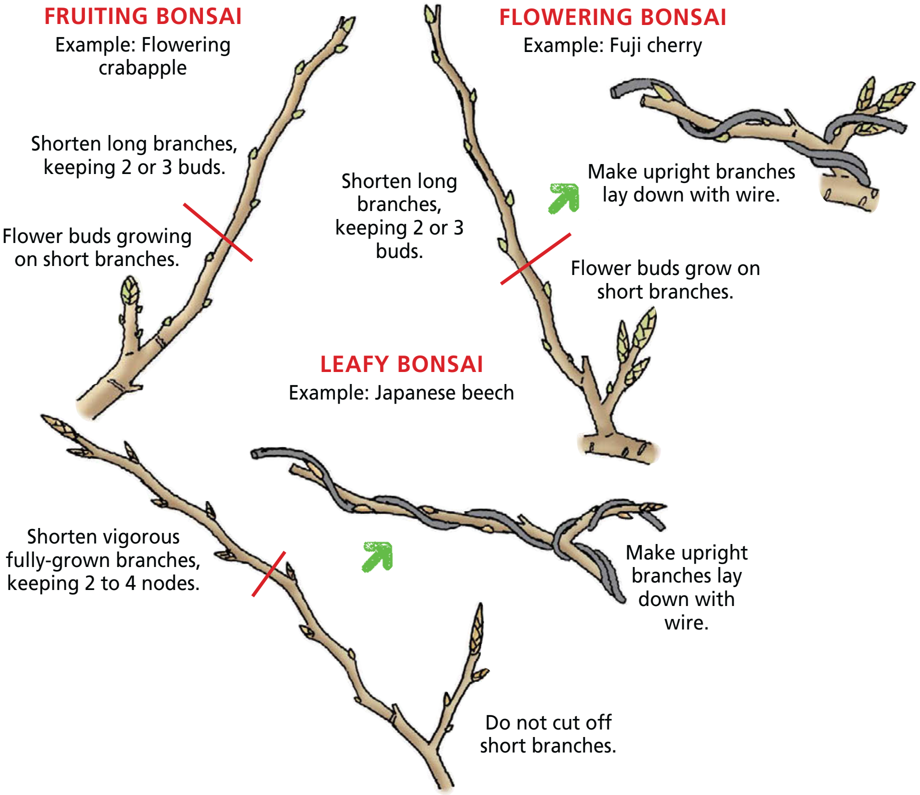
Pull any weeds.

If you placed fertilizer pellets in your bonsai in early November, you have finished fertilizing for this year.

December

- ☑ Pruning and wiring
- ☑ Disinfecting in winter
- ☑ Broadening conifer candles: Wiring
- ☑ Preparing bonsai shelters for winter
- ☑ Black pine needle removal
- ☑ Bonsai as New Year's decorations
- ☑ Leafy bonsai: Light pruning

Pruning and wiring



FRUITING BONSAI

Example: Flowering crabapple

Shorten long branches, keeping 2 or 3 buds.

Flower buds growing on short branches.

FLOWERING BONSAI

Example: Fuji cherry

Shorten long branches, keeping 2 or 3 buds.

Make upright branches lay down with wire.

Flower buds grow on short branches.

LEAFY BONSAI

Example: Japanese beech

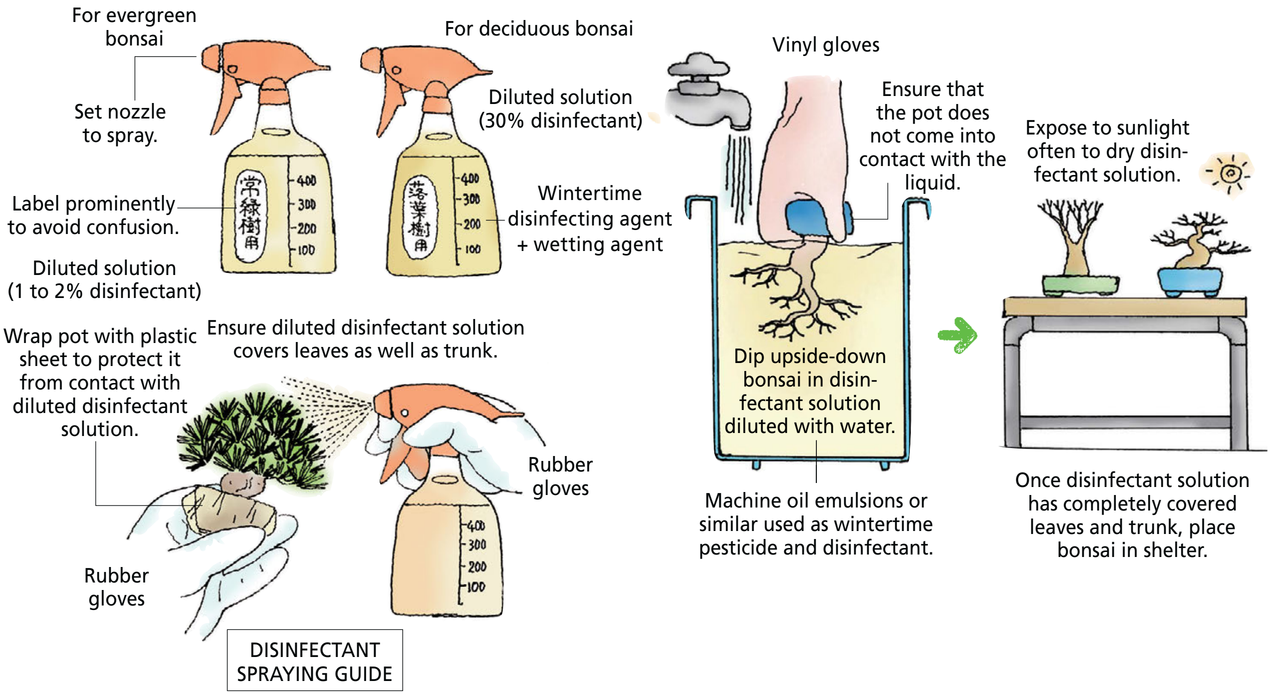
Shorten vigorous fully-grown branches, keeping 2 to 4 nodes.

Make upright branches lay down with wire.

Do not cut off short branches.

Disinfecting in winter

DISINFECTANT SPRAYING



For evergreen bonsai

Set nozzle to spray.

Label prominently to avoid confusion.

Diluted solution (1 to 2% disinfectant)

For deciduous bonsai

Diluted solution (30% disinfectant)

Wintertime disinfecting agent + wetting agent

Wrap pot with plastic sheet to protect it from contact with diluted disinfectant solution.

Ensure diluted disinfectant solution covers leaves as well as trunk.

Rubber gloves

Rubber gloves

DISINFECTANT SPRAYING GUIDE

Vinyl gloves

Ensure that the pot does not come into contact with the liquid.

Dip upside-down bonsai in disinfectant solution diluted with water.

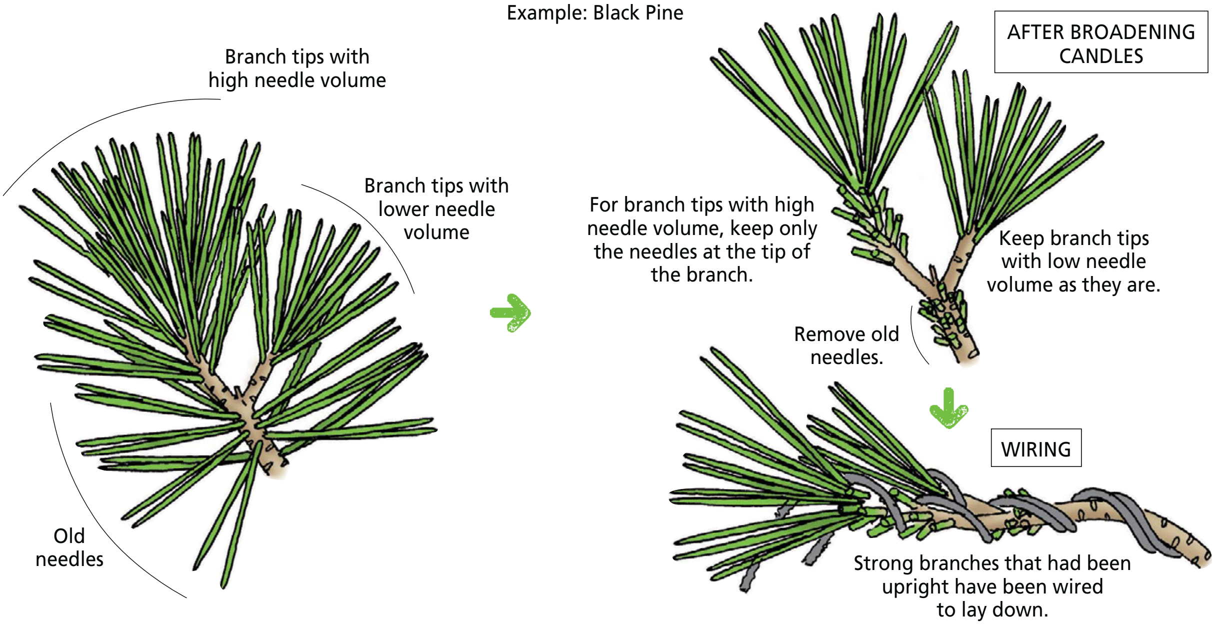
Machine oil emulsions or similar used as wintertime pesticide and disinfectant.

Expose to sunlight often to dry disinfectant solution.

Once disinfectant solution has completely covered leaves and trunk, place bonsai in shelter.

Broadening conifer candles: Wiring

Example: Black Pine

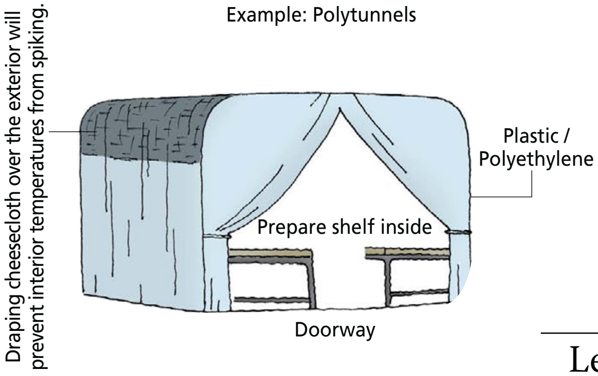

Branch tips with high needle volume
Branch tips with lower needle volume
Old needles
AFTER BROADENING CANDLES
Keep branch tips with low needle volume as they are.
Remove old needles.
WIRING

For branch tips with high needle volume, keep only the needles at the tip of the branch.

Strong branches that had been upright have been wired to lay down.

Preparing bonsai shelters for winter

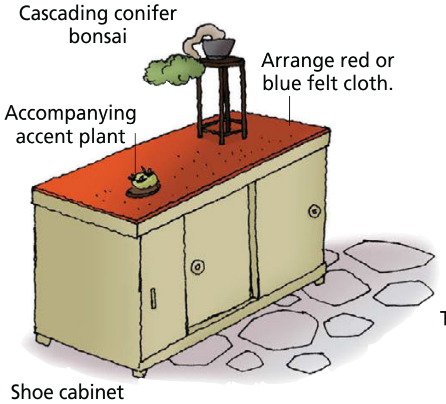
Example: Polytunnels


Plastic / Polyethylene
Prepare shelf inside
Doorway

Draping cheesecloth over the exterior will prevent interior temperatures from spiking.

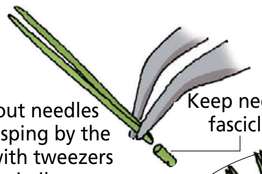
Bonsai as New Year's decorations

Example: Entry hall

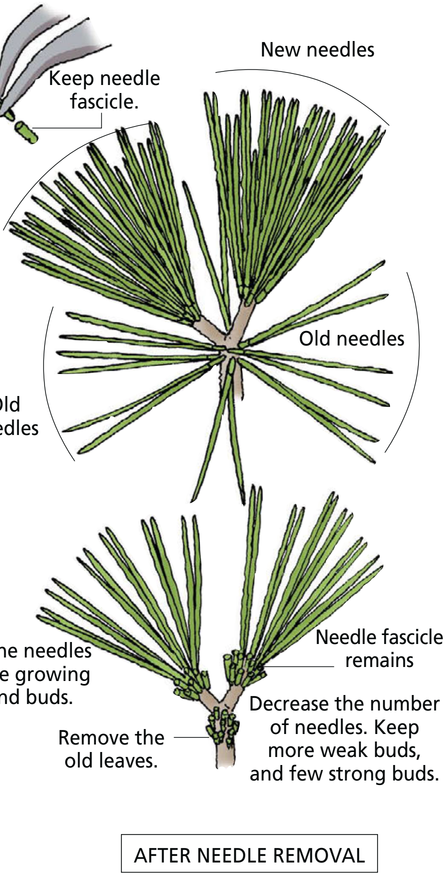

Cascading conifer bonsai
Arrange red or blue felt cloth.
Accompanying accent plant
Shoe cabinet

Refer to page 8.

Black pine needle removal


Keep needle fascicle.

Pull out needles by grasping by the base with tweezers or similar.


New needles
New leaves
Old needles
Old needles
Needle fascicle remains
AFTER NEEDLE REMOVAL

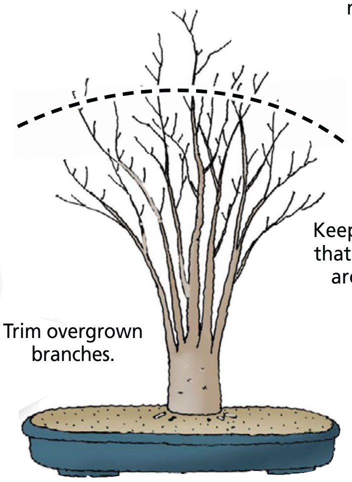
Keep the needles that are growing around buds.

Remove the old leaves.

Decrease the number of needles. Keep more weak buds, and few strong buds.

Leafy bonsai: Light pruning

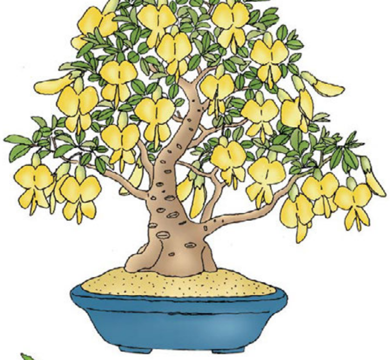
Example: Japanese zelkova

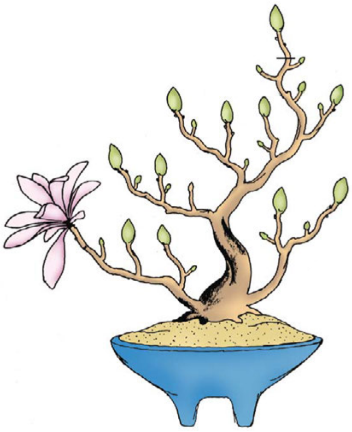

Trim overgrown branches.

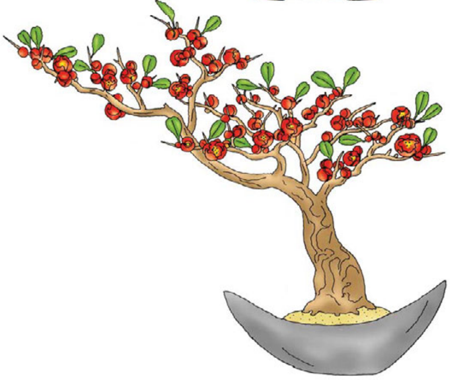
THE POPULARITY OF BONSAI TREES IS DUE IN PART TO THE PROMISE OF THEIR FLORAL GLORY

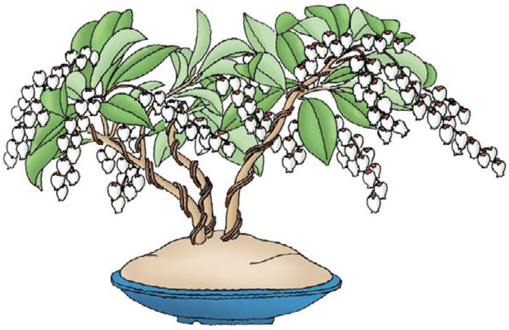
How to Care for Flowering Bonsai

Of course, these bonsai are noteworthy for their flowering, but the personality of their root-flare, trunks and so on are also fascinating. To begin, let's prepare some specific popular varieties.









LET'S BEGIN BY SELECTING AND NURTURING ATTRACTIVE BONSAI SPECIES

Charming and lustrous flowers made to bloom on small trees, these "flowering" bonsai herald the arrival of another season, imbuing the entire space with their festive atmosphere. This book puts aside such philosophical discussions as "What is a bonsai?" and rather, it will provide a foundation of instructions and tips on raising and caring for them. Illustrator Gun Kyosuke uses his vast experience with small bonsai (under 8 inches / 20 cm) to show you how to nurture them. And naturally, this foundation applies to raising larger bonsai as well. First, you choose a tree you really like, and use the monthly bonsai care calendar (pages 25–58) as a guide. Don't be afraid of making mistakes—let yourself enjoy the tradition of bonsai that Japan has shown to the world.

Caring for bonsai is a way of life, and the presence of bonsai can transform your lifestyle. And part of this transformation is in making time to train and care for the bonsai every day.

In addition, basic information about bonsai begins with "How to Appreciate Bonsai" on page 7, and to help improve your understanding of the more technical language of this art, refer to the Glossary, which begins on page 176.

Plum

JAPANESE NAME
Ume

ALTERNATIVE NAMES
Koubun Bun Kiboku

SCIENTIFIC NAME
Prunus mume

CLASSIFICATION
Rose

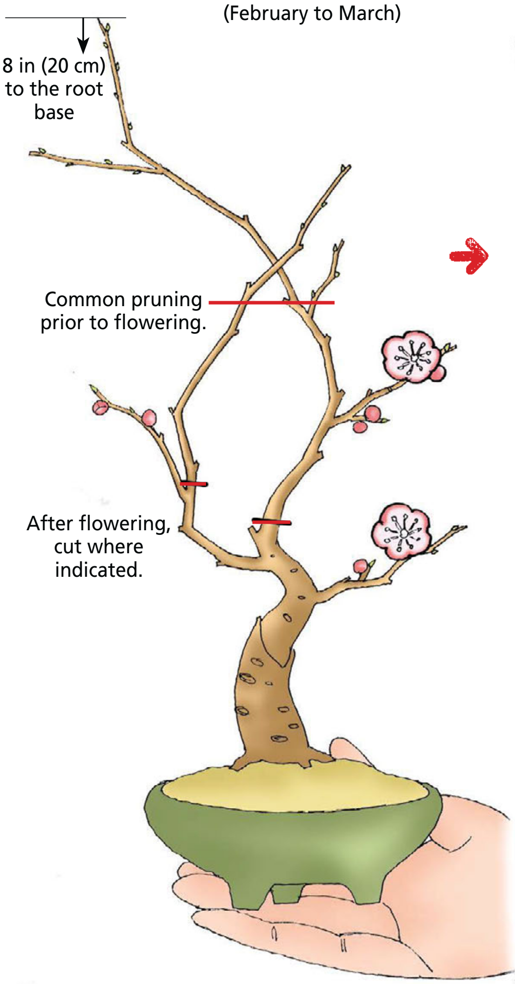
SYMBOLIC OF
Independence, Strength

FLOWERING
February to March

This tree was brought to Japan by Chinese ambassadors during the Nara period. The flowers provided enjoyment, and the fruit was used as food and medicine. With fragrant five-petaled flowers, the flowering of this bonsai is an indication of early spring. The flowers can be various colors, such as white, pink or red. The dormant period is a good time for pruning.

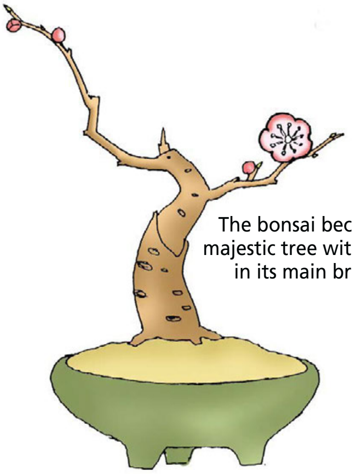
PRIOR TO CARE

(February to March)


8 in (20 cm)
to the root
base
Common pruning
prior to flowering.
After flowering,
cut where
indicated.

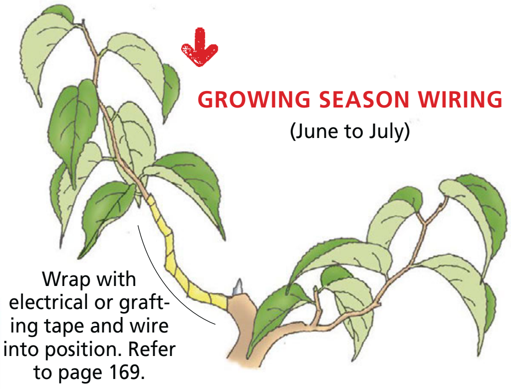
PRUNING EXAMPLES

To make the bonsai smaller.


The bonsai becomes a
majestic tree with a bend
in its main branch.

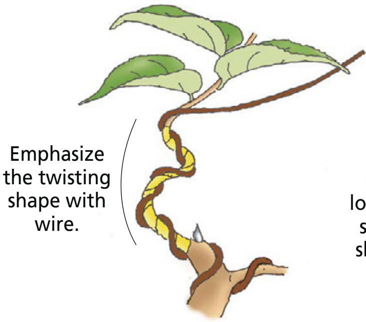
GROWING SEASON WIRING

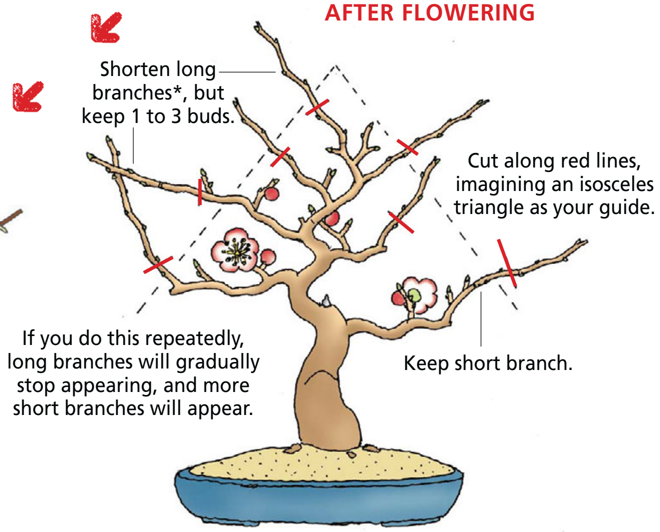
(June to July)


Wrap with
electrical or grafting tape and wire
into position. Refer
to page 169.

APPEARANCE AFTER SEVERAL YEARS: PRUNING AFTER FLOWERING

SHAPING WITH WIRE**

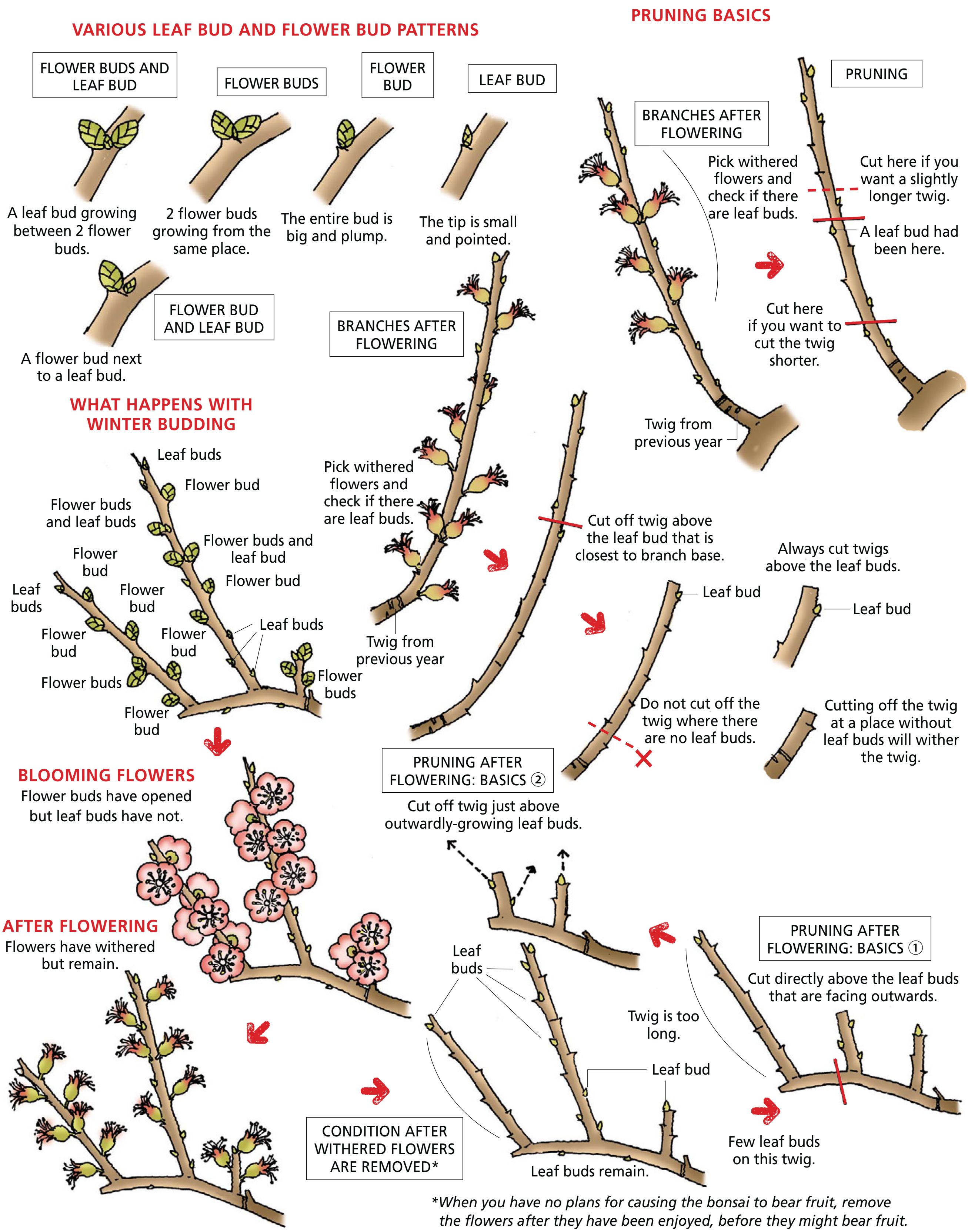

Emphasize
the twisting
shape with
wire.


Shorten long
branches*, but
keep 1 to 3 buds.
Cut along red lines,
imagining an isosceles
triangle as your guide.
If you do this repeatedly,
long branches will gradually
stop appearing, and more
short branches will appear.
Keep short branch.

*Long branches: The situation where a vigorous branch has grown to a length that seems discordant. Many adventitious buds grow and often become branches that give the tree an unkempt shape and appearance.

**Shape with wire: Bending with wire: The situation where a branch or trunk is shaped with wire to cause it to bend. On their own, branches have a tendency to grow upward, and training them is an art that all bonsai practitioners must develop. Pruning and bending will promote the health and training of the bonsai by improving airflow and sunlight. Refer to page 169.*

Cut off the twig just above the leaf buds near the branch base



VARIOUS LEAF BUD AND FLOWER BUD PATTERNS

FLOWER BUDS AND LEAF BUD
A leaf bud growing between 2 flower buds.
FLOWER BUDS
2 flower buds growing from the same place.
FLOWER BUD
The entire bud is big and plump.
LEAF BUD
The tip is small and pointed.
FLOWER BUD AND LEAF BUD
A flower bud next to a leaf bud.

WHAT HAPPENS WITH WINTER BUDDING

Leaf buds
Flower bud
Flower buds and leaf buds
Flower buds and leaf bud
Flower bud
Leaf buds
Flower bud
Flower bud
Flower bud
Leaf buds
Flower bud
Flower bud
Flower buds
Flower bud
Flower buds

BLOOMING FLOWERS

Flower buds have opened but leaf buds have not.

AFTER FLOWERING

Flowers have withered but remain.
CONDITION AFTER WITHERED FLOWERS ARE REMOVED*
Leaf buds
Leaf buds remain.
Twig is too long.
Leaf bud

PRUNING BASICS

BRANCHES AFTER FLOWERING
Pick withered flowers and check if there are leaf buds.
Twig from previous year
PRUNING
Cut here if you want a slightly longer twig.
A leaf bud had been here.
Cut here if you want to cut the twig shorter.
BRANCHES AFTER FLOWERING
Pick withered flowers and check if there are leaf buds.
Twig from previous year
Cut off twig above the leaf bud that is closest to branch base.
Leaf bud
Do not cut off the twig where there are no leaf buds.
Always cut twigs above the leaf buds.
Leaf bud
Cutting off the twig at a place without leaf buds will wither the twig.
PRUNING AFTER FLOWERING: BASICS ②
Cut off twig just above outwardly-growing leaf buds.
PRUNING AFTER FLOWERING: BASICS ①
Cut directly above the leaf buds that are facing outwards.
Few leaf buds on this twig.

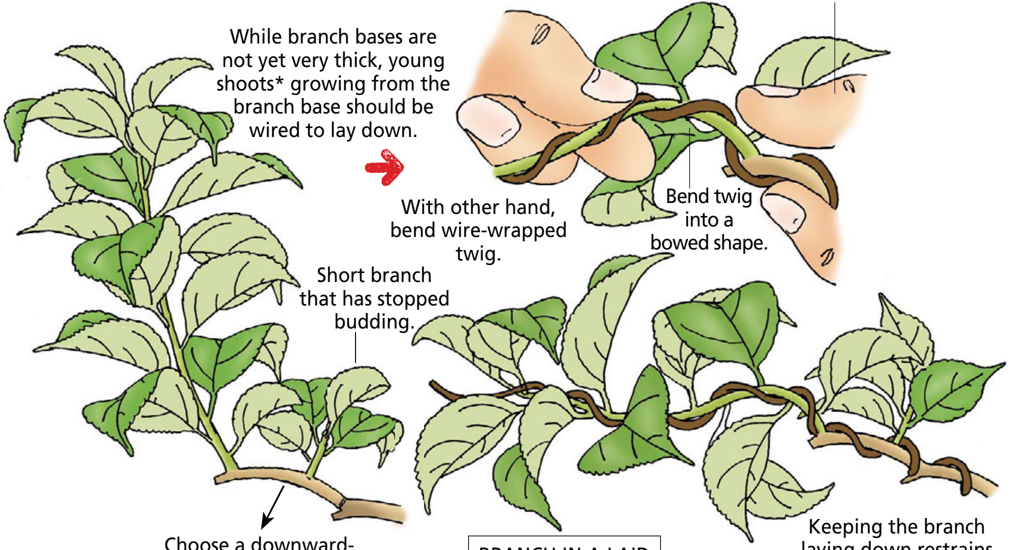
*When you have no plans for causing the bonsai to bear fruit, remove the flowers after they have been enjoyed, before they might bear fruit.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period • Flowering (February–March)
February	Grafting				Pruning	Winter		
March	Seeding							
April		2–3 times / day			Bud picking (April–May) • Wiring	Growth period		Growth period • Sprout separating (June–August)
May			Add fertilizer					
June	Cutting							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime
November								
December						Winter		

Growth Period Work

(Laying down new branch tips & folding down unneeded branches)



LAYING DOWN NEW BRANCH TIPS

While branch bases are not yet very thick, young shoots* growing from the branch base should be wired to lay down.

Short branch that has stopped budding.

Choose a downward-pointing branch.

BENDING GUIDE

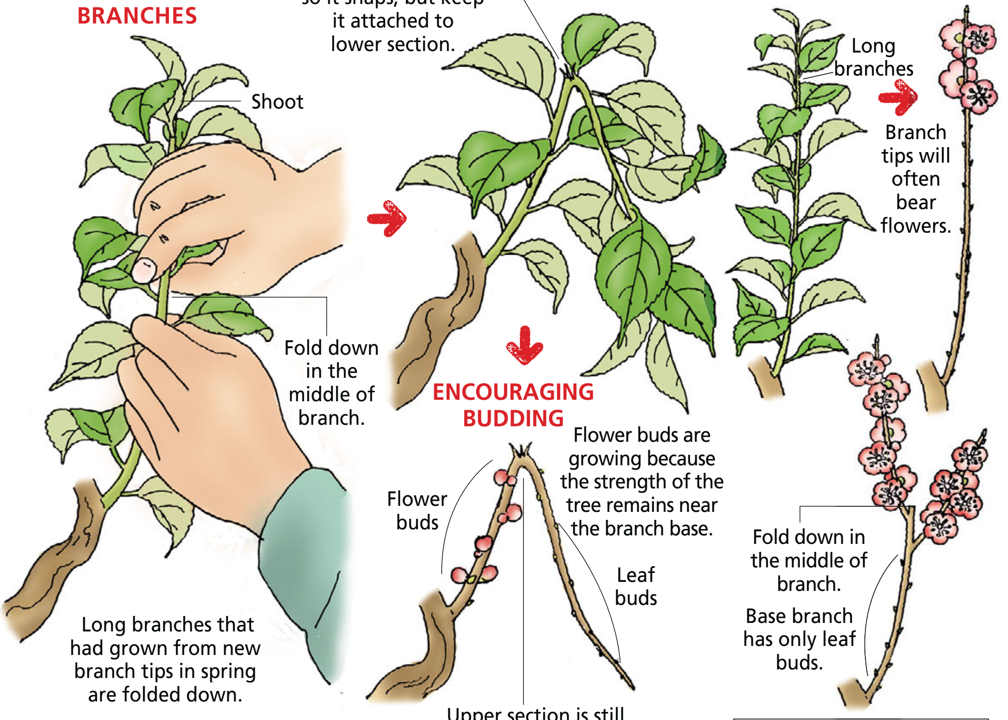
Hold with 1 hand.

With other hand, bend wire-wrapped twig.

Bend twig into a bowed shape.

BRANCH IN A LAID DOWN STATE

Keeping the branch laying down restrains vigorous growth, and you can expect flower buds to appear as well.



FOLDING UNNEEDED BRANCHES

Shoot

Fold down in the middle of branch.

Long branches that had grown from new branch tips in spring are folded down.

AFTER FOLDING UNNEEDED BRANCHES

Fold upper section down so it snaps, but keep it attached to lower section.

RESULTS WHEN BRANCH IS NOT FOLDED DOWN ①

Long branches

Branch tips will often bear flowers.

ENCOURAGING BUDDING

Flower buds are growing because the strength of the tree remains near the branch base.

Flower buds

Leaf buds

Upper section is still alive because it is connected underneath.

Fold down in the middle of branch.

Base branch has only leaf buds.

RESULTS WHEN BRANCH IS NOT FOLDED DOWN ②

**Young shoots: branches that have grown this year. The spring buds that grew into branches are known as one-year branches. They will be two-year branches in the following year.*

Siberian Peashrub

JAPANESE NAME
Muresuzume

ALTERNATIVE NAMES
***Enishida*, Caragana**

SCIENTIFIC NAME
Caragana chamlagu

CLASSIFICATION
Legume

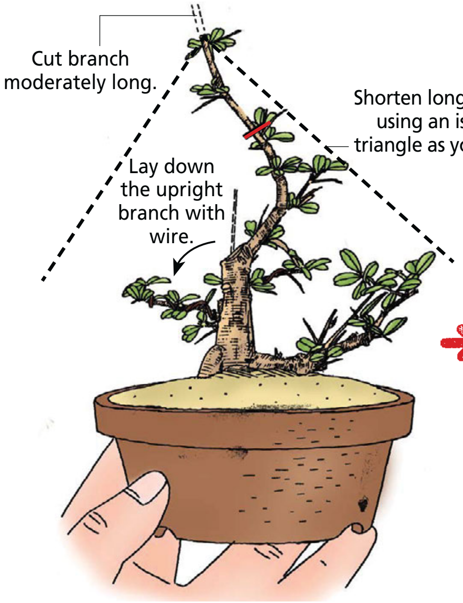
SYMBOLIC OF
Community, Abundance

FLOWERING
April to May

In full bloom, its flowers resemble a flock of sparrows perched among the branches. These flowers are butterfly-shaped, about 1 inch (2.5 cm) long and gradually take on a reddish tinge. Pruning should be done during dormant period or after flowering, and laying down roots is effective for propagation. Keep a trimmed-off thick root in a pot buried in soil and it will sprout.

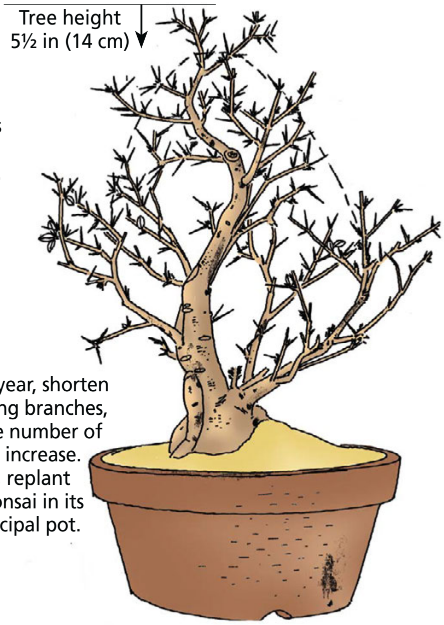
PRUNING LONG BRANCHES

This bonsai is an improved 2nd-year tree (in late November).


Cut branch moderately long.
Lay down the upright branch with wire.
Shorten long branches using an isosceles triangle as your guide.

SIX YEARS AFTER REPLANTING

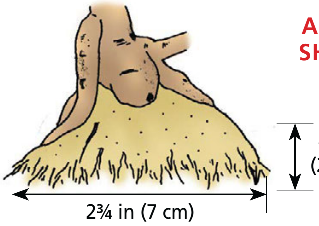
(Early March)


Tree height 5½ in (14 cm)

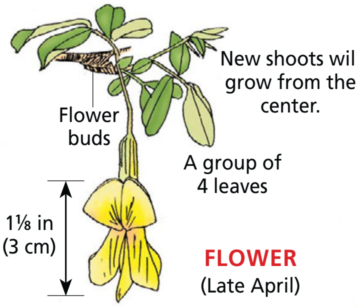
Every year, shorten the long branches, so the number of twigs increase. Also, replant the bonsai in its principal pot.

AFTER ROOT SHORTENING

(March)

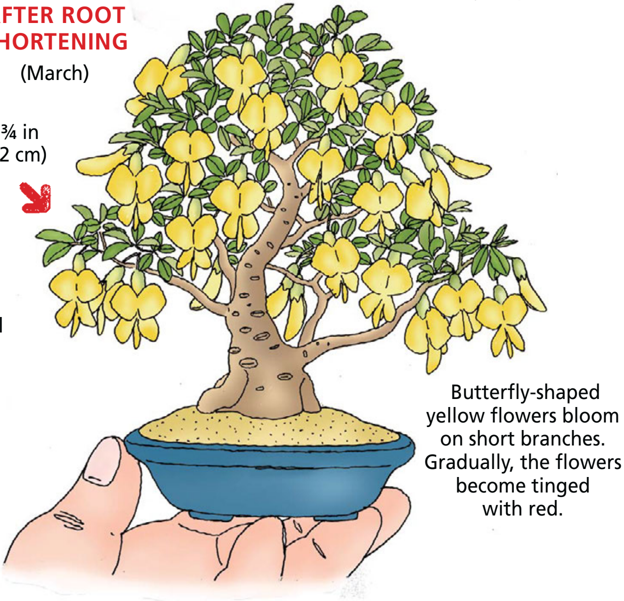

¾ in (2 cm)
2¾ in (7 cm)

FLOWER-BEARING GUIDE


New shoots will grow from the center.
Flower buds
A group of 4 leaves
1⅛ in (3 cm)
FLOWER
(Late April)

FLOWERING

(April to May)



Butterfly-shaped yellow flowers bloom on short branches. Gradually, the flowers become tinged with red.

SCHEDULE	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Grafting			Cutting • Layering						
Watering	1–2 times / day			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth stage							Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (April–June)						Prime		

Japanese Quince

JAPANESE NAME
Choujubai

ALTERNATIVE NAMES
Yodoboke, Chojubai

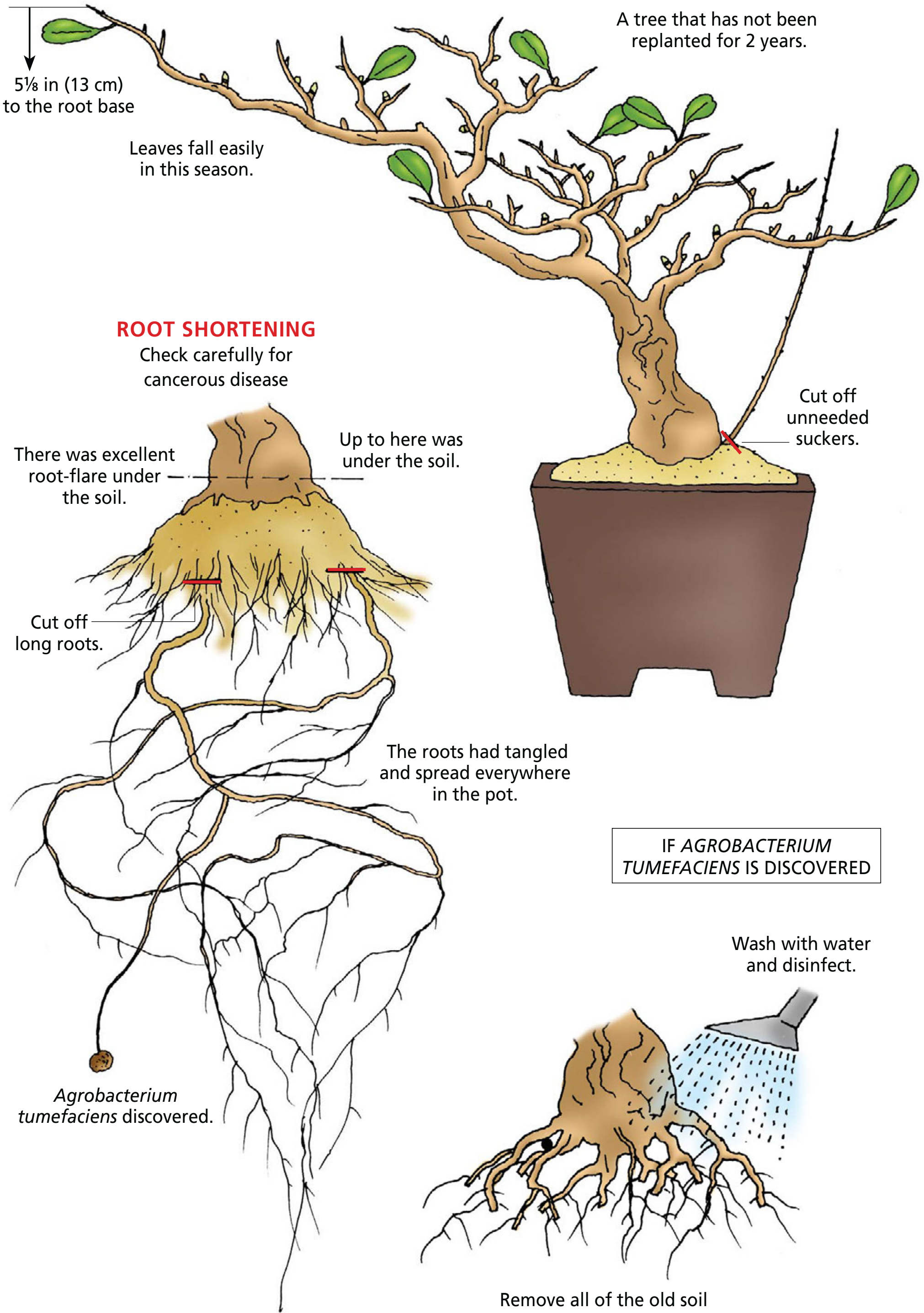
SCIENTIFIC NAME
Chaenomeles specios

CLASSIFICATION
Rose

SYMBOLIC OF
n/a

FLOWERING
March to April

These trees are year-round bloomers*, and may flower three to five times a year. Its flowers are brilliant reds and oranges, and even after flowering, we can enjoy its beautiful leaves. Although its leaves fall several times a year, before long, new buds will appear. After flowering, plucking the withered blossoms and adding extra fertilizer are essential to encourage the next flowering.



BEFORE REPLANTING

(March)

A tree that has not been replanted for 2 years.

5⅛ in (13 cm)
to the root base
Leaves fall easily
in this season.
Cut off
unneeded
suckers.

ROOT SHORTENING

Check carefully for cancerous disease

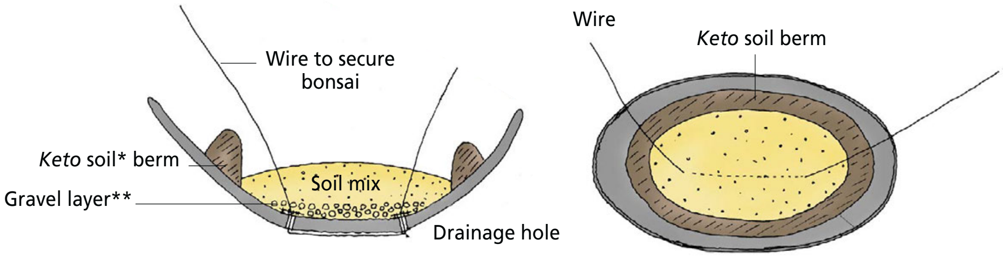
There was excellent
root-flare under
the soil.
Up to here was
under the soil.
Cut off
long roots.
The roots had tangled
and spread everywhere
in the pot.
*Agrobacterium
tumefaciens* discovered.

IF *AGROBACTERIUM TUMEFACIENS* IS DISCOVERED

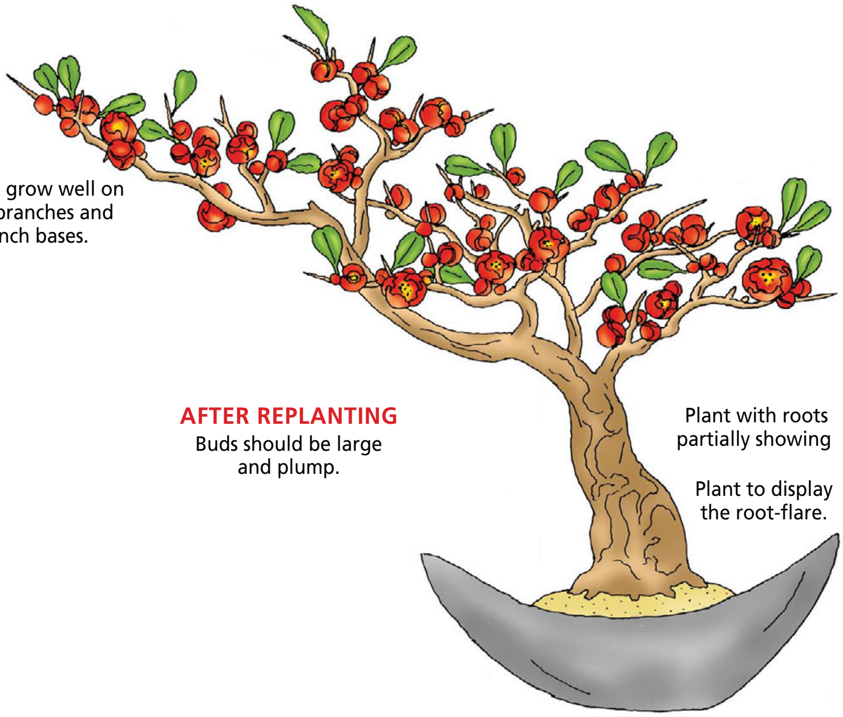
Wash with water
and disinfect.
Remove all of the old soil
from the roots.

**Year-round bloomer: When in peak condition, flowers can bloom year-round as long as the tree is maintained at minimum temperatures required for growth. Many trees only bloom in the spring and autumn.*

PLANTING GUIDE

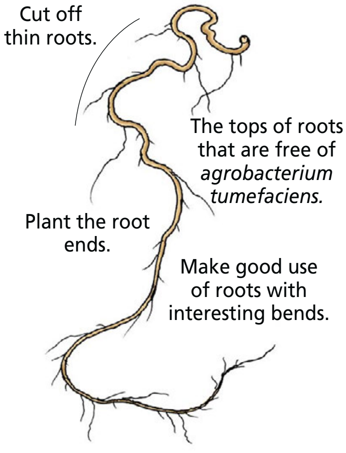

Wire to secure bonsai
Keto soil* berm
Gravel layer**
Soil mix
Drainage hole
Wire
Keto soil berm

AFTER REPLANTING

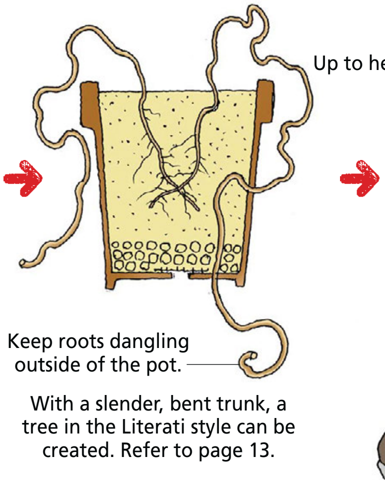

Flowers grow well on short branches and branch bases.
Buds should be large and plump.
Plant with roots partially showing
Plant to display the root-flare.

DEVELOPING NEW ROOTS

(Refer to page 18)

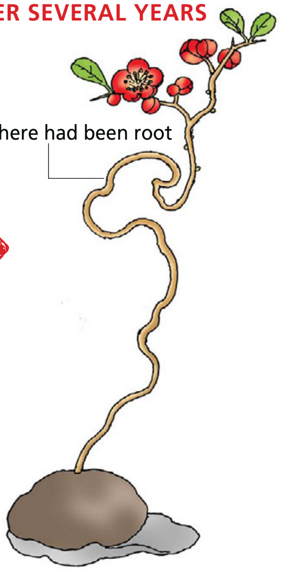

Cut off thin roots.
The tops of roots that are free of agrobacterium tumefaciens.
Plant the root ends.
Make good use of roots with interesting bends.

PLANTING GUIDE


Keep roots dangling outside of the pot.

With a slender, bent trunk, a tree in the Literati style can be created. Refer to page 13.

HOW BONSAI APPEARS AFTER SEVERAL YEARS


Up to here had been root

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period • Flowering (March–April)
February					Pruning	Winter		
March	Cutting						▨	
April		2–3 times / day	Add fertilizer					Growth period
May					Wiring	Growth period		
June	Cutting							
July		3–4 times / day	Water & fertilizer	Shading • Pruning (September)				
August								
September		2–3 times / day	Add fertilizer				▨	
October								Prime
November								
December		▨		▨		Winter		▨

Keto soil: A sticky soil formed by plant compost (primarily common reeds that grow wild in rivers and wetlands. Composed largely of fiber, keto soil *is used to make moss balls and is in the soil mix for root-in-rock bonsai.*

***Gravel layer: Also known as the bottom layer, it is the coarsest part (with particles being about ¼ to 7⁄16 in / 7 to 10 mm in diameter) of a soil mix in bonsai. Used to improve drainage through the bottom of pots.*

Fuji Cherry

JAPANESE NAME
Sakura

ALTERNATIVE NAMES
Fuji Sakura, Hakone Sakura

SCIENTIFIC NAME
Cerasus insica Thunb. ex Murray

CLASSIFICATION
Rose (deciduous hardwood / shrub)

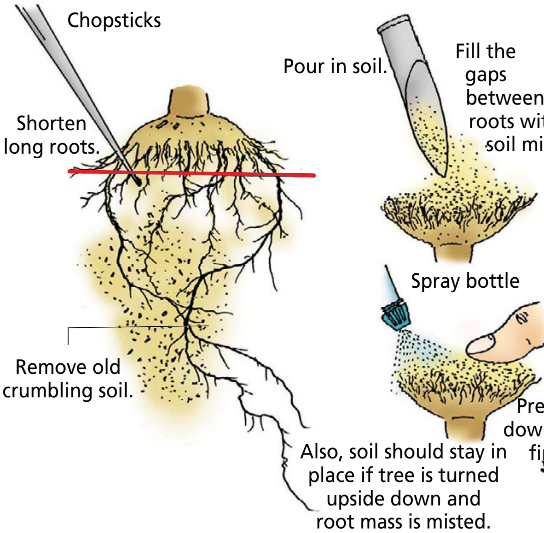
SYMBOLIC OF
Excellent beauty

FLOWERING
April

Flowers open, revealing small white or pale red petals. This iconic tree grows wild around Hakone and Mount Fuji, and in the mountains of Honshu and Chubu regions. The debranching* of cherry trees is standard, because if branches are cut mid-way up, they wither easily, and wiring branches to lay them down is recommended to restrain their otherwise vigorous growth.

REPLANTING

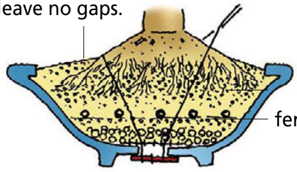
(From mid-March until after flowering, or from mid-September to early October).


Chopsticks
Shorten long roots.
Pour in soil.
Fill the gaps between roots with soil mix.
Remove old crumbling soil.
Spray bottle
Press soil mix down with your fingertips.

Also, soil should stay in place if tree is turned upside down and root mass is misted.

PLANTING GUIDE

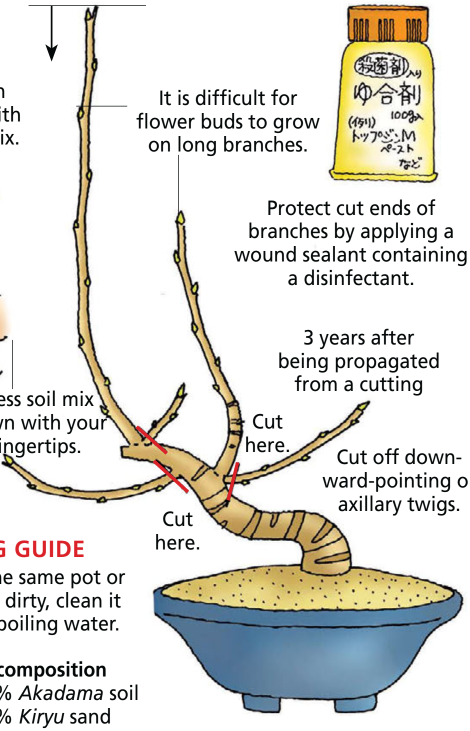
When reusing the same pot or pot has become dirty, clean it well once with boiling water.


Soil has been packed around roots to leave no gaps.
Securing wire
Base fertilizer**

Soil composition
80% *Akadama* soil
20% *Kiryu* sand
+ about 5% rice hull

WIRING TO MAKE A SKELETAL FRAME

(Dormant period)


4 in (10 cm) to the root base
It is difficult for flower buds to grow on long branches.
殺菌剤入り
ゆ合剤
(例)
100g入
トップジンM
ペースト
など
Cut here.
Cut here.

Protect cut ends of branches by applying a wound sealant containing a disinfectant.

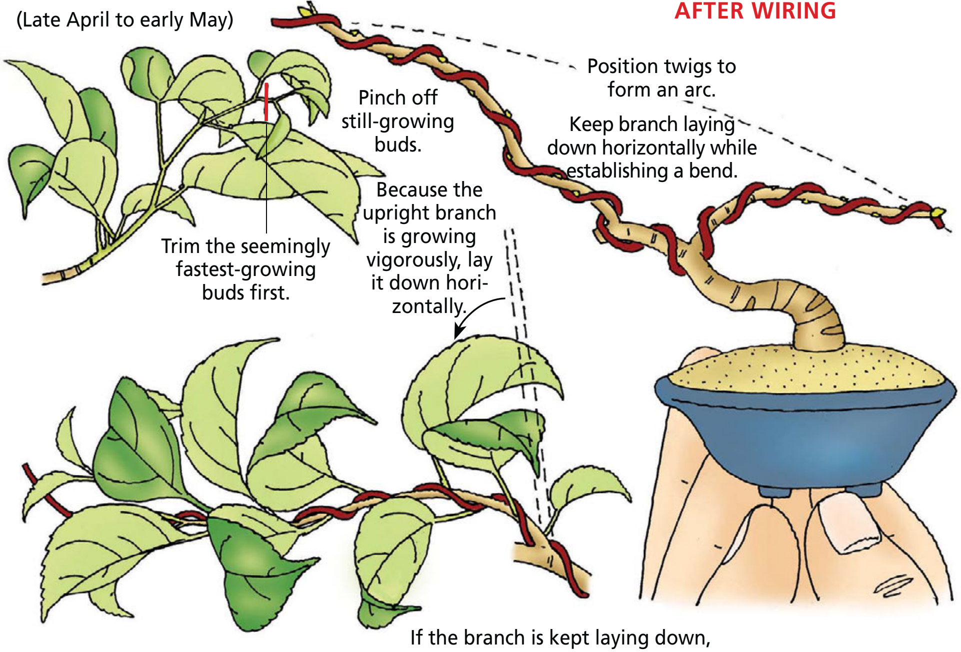
3 years after being propagated from a cutting

Cut off downward-pointing or axillary twigs.

PINCHING OFF BUDS

(Late April to early May)

AFTER WIRING


Pinch off still-growing buds.
Trim the seemingly fastest-growing buds first.
Position twigs to form an arc.

Keep branch laying down horizontally while establishing a bend.

Because the upright branch is growing vigorously, lay it down horizontally.

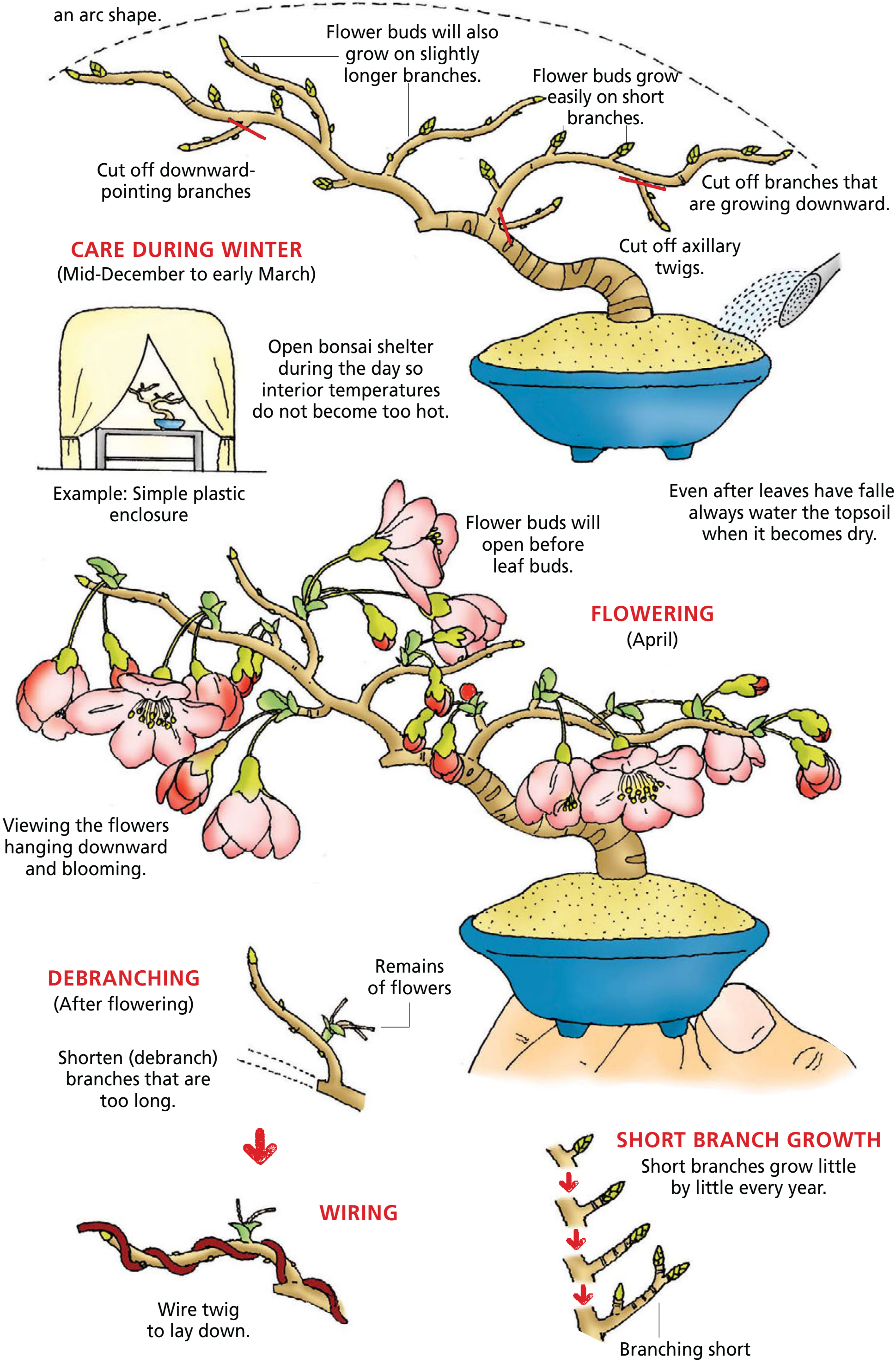
If the branch is kept laying down, it will receive more sun and flower buds will also grow more easily.

GROWING SEASON WIRING

(June)

Debranching ("thinning out," "culling" or "pruning"): The method of cutting off a branch above the base of a smaller branch (the section at the base of the smaller branch).

***Base fertilizer: Before planting, fertilizers are needed in advance for growth, and slow-acting organic fertilizers are often employed.*



CONDITION WHEN LEAVES HAVE FALLEN

(Checking flower buds—2 to 3 years later—Dormant period)

Maintain tree in an arc shape.

Flower buds will also grow on slightly longer branches.

Flower buds grow easily on short branches.

Cut off downward-pointing branches

Cut off branches that are growing downward.

Cut off axillary twigs.

Even after leaves have fallen, always water the topsoil when it becomes dry.

CARE DURING WINTER

(Mid-December to early March)

Open bonsai shelter during the day so interior temperatures do not become too hot.

Example: Simple plastic enclosure

FLOWERING

(April)

Flower buds will open before leaf buds.

Viewing the flowers hanging downward and blooming.

DEBRANCHING

(After flowering)

Remains of flowers

Shorten (debranch) branches that are too long.

WIRING

Wire twig to lay down.

SHORT BRANCH GROWTH

Short branches grow little by little every year.

Branching short branch

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Cutting			Layering • Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			▨
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping				Pruning		Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting			▨						▨			
Growth State	Dormancy period			Growth period • Flowering (April) • Sprout separating (July–August)						Prime		▨

Japanese Andromeda

JAPANESE NAME
Asebi

ALTERNATIVE NAMES
Asebo, Umagoroshi

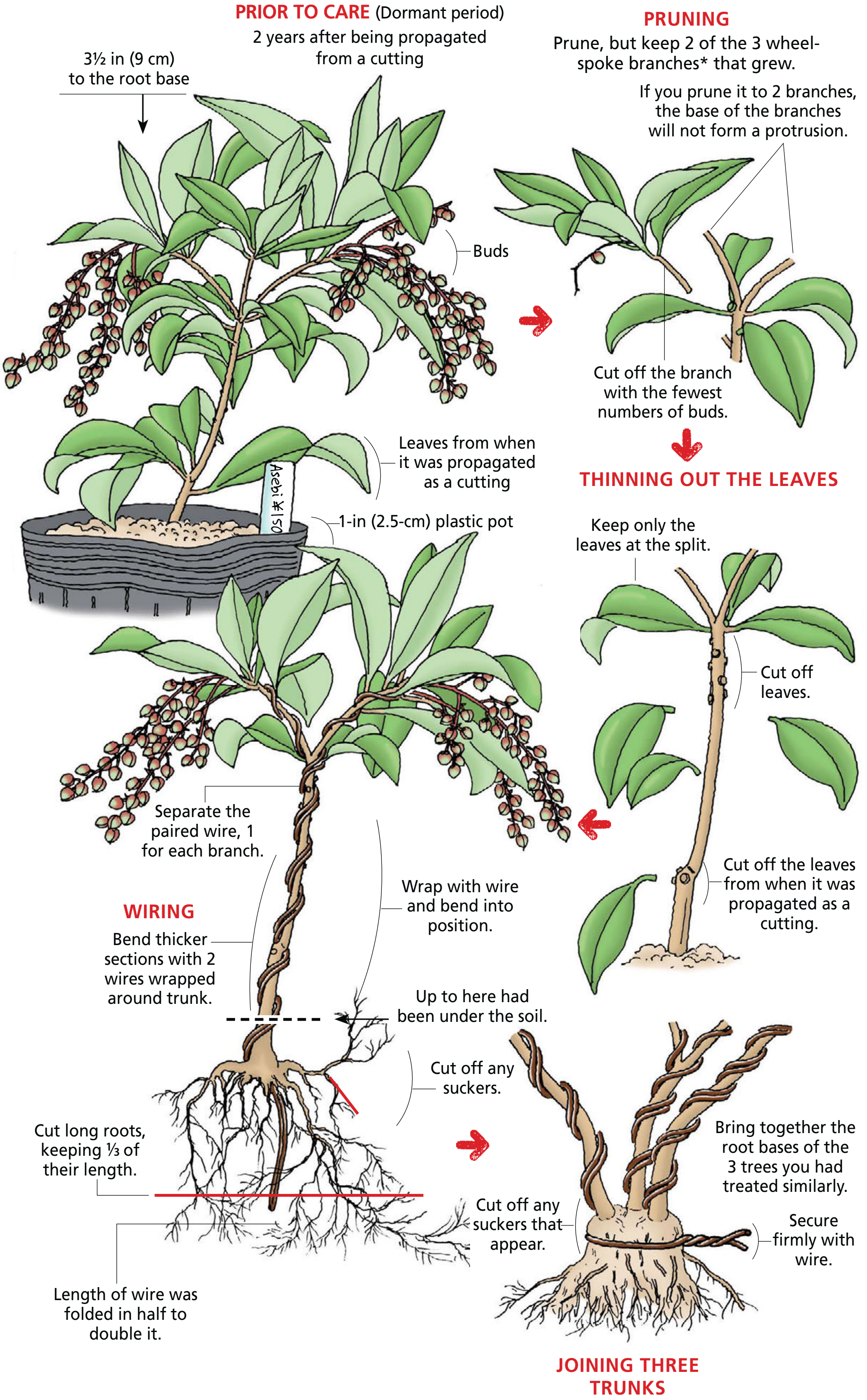
SCIENTIFIC NAME
Pieris japonica

CLASSIFICATION
Azalea (evergreen hardwood / shrub)

SYMBOLIC OF
Dedication, Pure heart

FLOWERING
March to April

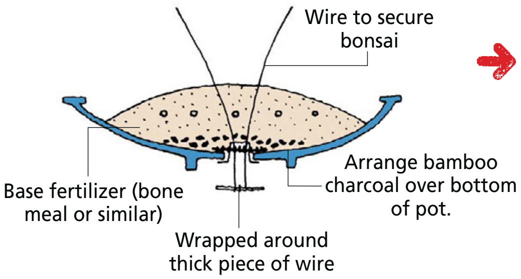
Resembling lily of the valley, small white or pink flowers bloom in clusters on drooping branches. A shrub of the family *ericaceae*, it grows wild in the mountains of Japan and is popular in gardens. It grows reliably, and because it is entirely toxic, animals and insects cannot feed on it.


PRIOR TO CARE (Dormant period)
2 years after being propagated from a cutting
3½ in (9 cm) to the root base
Buds
Leaves from when it was propagated as a cutting
Asebi #150
1-in (2.5-cm) plastic pot
PRUNING
Prune, but keep 2 of the 3 wheel-spoke branches* that grew.
If you prune it to 2 branches, the base of the branches will not form a protrusion.
Cut off the branch with the fewest numbers of buds.
THINNING OUT THE LEAVES
Keep only the leaves at the split.
Cut off leaves.
Cut off the leaves from when it was propagated as cutting.
Separate the paired wire, 1 for each branch.
WIRING
Bend thicker sections with 2 wires wrapped around trunk.
Wrap with wire and bend into position.
Up to here had been under the soil.
Cut off any suckers.
Cut long roots, keeping ⅓ of their length.
Length of wire was folded in half to double it.
Cut off any suckers that appear.
Bring together the root bases of the 3 trees you had treated similarly.
Secure firmly with wire.
JOINING THREE TRUNKS

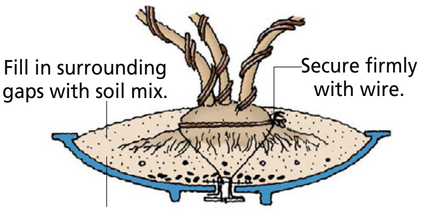
Wheel-spoke branches: When three or more branches have grown from one spot on a trunk in a spoke-like configuration.

PREPARING THE MOUND OF SOIL MIX

Make a mound* of soil mix and plant the tree high** on the mound.

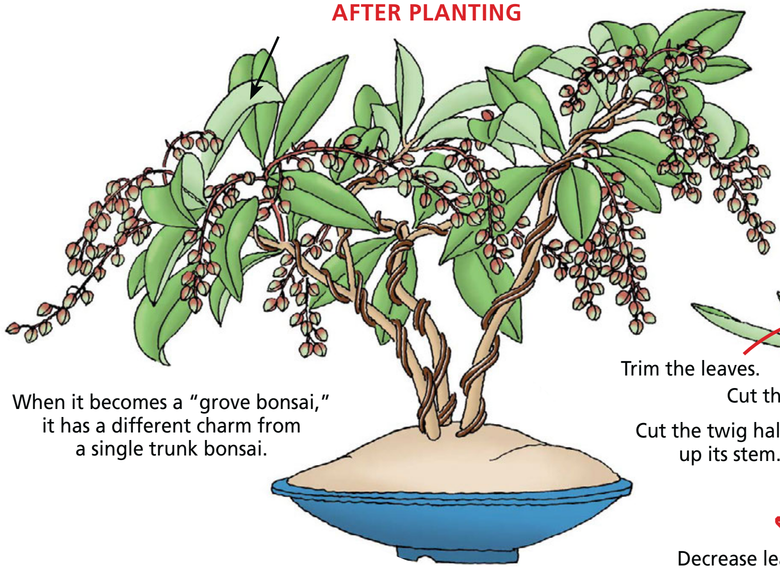

Wire to secure bonsai
Base fertilizer (bone meal or similar)
Arrange bamboo charcoal over bottom of pot.
Wrapped around thick piece of wire

PLANTING GUIDE


Fill in surrounding gaps with soil mix.
Secure firmly with wire.

Soil composition
80% *Akadama* soil
20% *Kiryu* sand

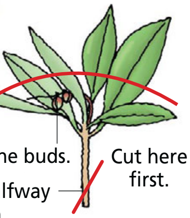
AFTER PLANTING



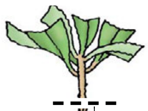
When it becomes a "grove bonsai," it has a different charm from a single trunk bonsai.

PROPAGATING WITH CUTTINGS

Make good use of cut twigs by propagating them as cuttings.***


Trim the leaves.
Cut the buds.
Cut here first.
Cut the twig halfway up its stem.

Decrease leaf mass to reduce moisture lost to transpiration.


Plant about ⅜ in (1 cm) into the soil.

FLOWERING

(March to April)

FRONT VIEW

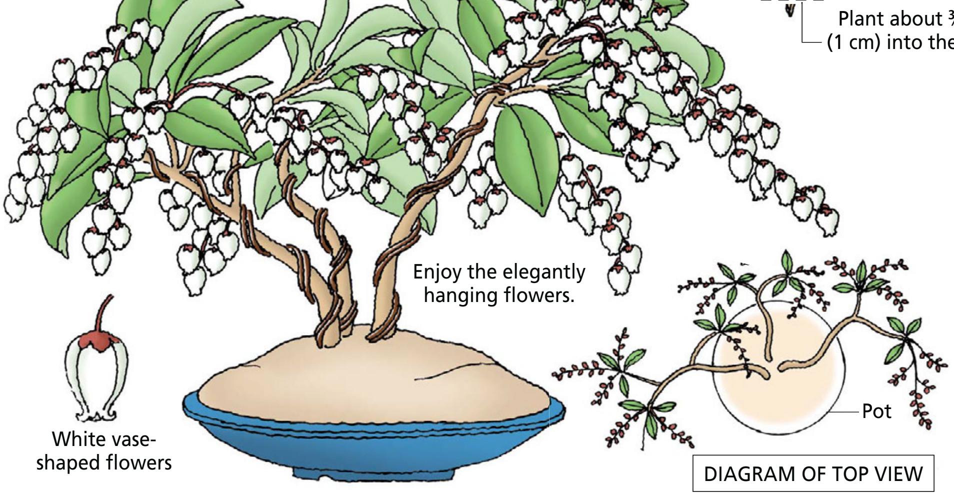

Enjoy the elegantly hanging flowers.
White vase-shaped flowers
Pot

DIAGRAM OF TOP VIEW

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Grafting				Pruning	Winter		
March	Seeding • Split stock						▨	
April		2–3 times / day						Growth period • Flowering (March–April)
May			Add fertilizer			Growth period		
June	Cutting				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					Prime
October								
November								
December						Winter		

---

*Mound: When a bonsai pot is filled with soil mix, the soil in the center is higher than the rim.

**Plant high: When the tree is planted on a mound so the entire surface of topsoil is higher than the rim.

***Propagating with cuttings: A method of propagation in which tree twigs lacking roots are cut off and planted into soil, causing them to put out new roots. Refer to page 21.

Japanese Rose

JAPANESE NAME
Noibara

ALTERNATIVE NAMES
Multiflora rose, Baby rose

SCIENTIFIC NAME
Rosa multiflora

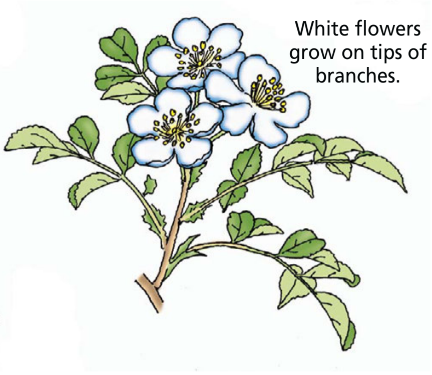
CLASSIFICATION
Rose (deciduous broad-leaved tree / shrub)

SYMBOLIC OF
Simple love

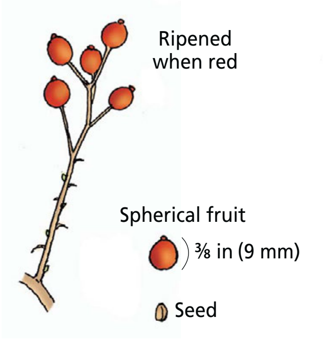
FLOWERING
May to June

Flowers are white or pale red and carry a faint scent upon blooming. Each flower is about ¾ in (2 cm) in diameter and has five petals. Representative of wild roses, the Japanese rose grows wild on sunny rural hillsides and mountainous areas. Only existing as a wild species, it is a resilient tree, and propagating with cuttings is recommended.

FLOWERING (June)

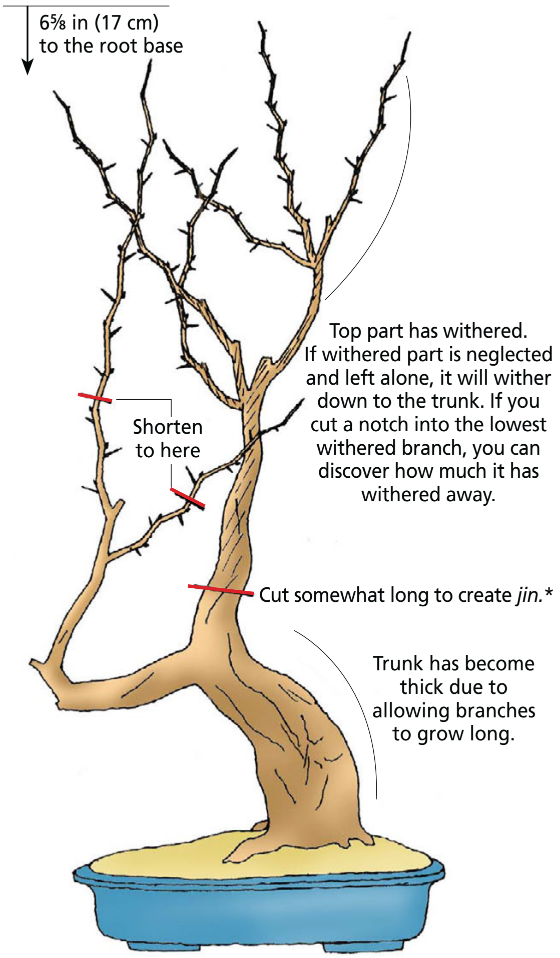

White flowers grow on tips of branches.

FRUITING (September)

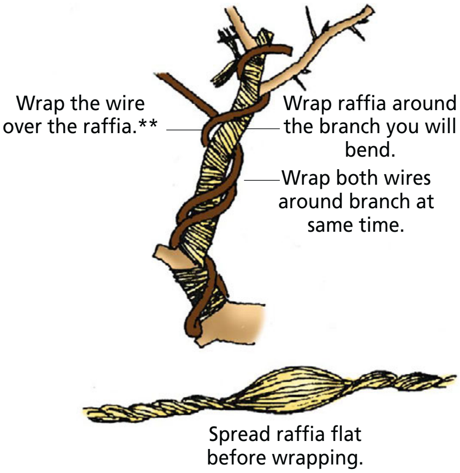

Ripened when red
Spherical fruit
⅜ in (9 mm)
Seed

CURRENT CONDITION (February to March)

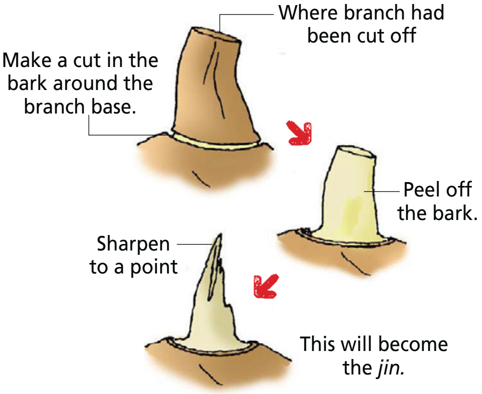
3 to 4 years after purchase


6⅝ in (17 cm) to the root base
Top part has withered. If withered part is neglected and left alone, it will wither down to the trunk. If you cut a notch into the lowest withered branch, you can discover how much it has withered away.
Shorten to here
Cut somewhat long to create jin.*
Trunk has become thick due to allowing branches to grow long.

BENDING TECHNIQUE ACTIONS


Wrap the wire over the raffia.**
Wrap raffia around the branch you will bend.
Wrap both wires around branch at same time.
Spread raffia flat before wrapping.

TREATING CUT-OFF BRANCH ENDS

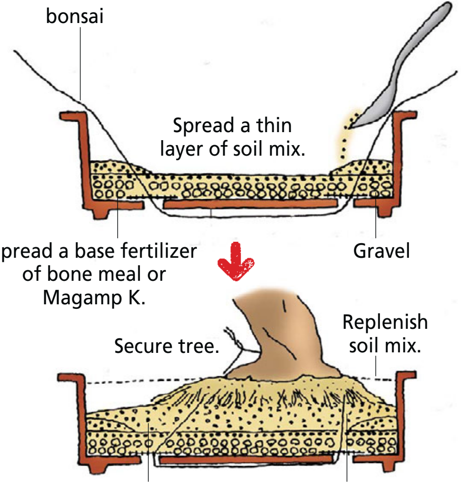

Where branch had been cut off
Make a cut in the bark around the branch base.
Peel off the bark.
Sharpen to a point
This will become the jin.

Jin: A branch that was withered, causing it to become bleached white. To produce the impression of an old tree in coniferous bonsai, the bark of its main branch and other branches can be peeled off and removed to artificially create an age-withered branch. Also, when cutting off unneeded branches, keep a short section of branch base to make into a* jin*, to convey that impression of an older tree. Furthermore, a bleached white section of trunk is known as* shari*. Refer to page 172.*

***Raffia: A cord for gardening made from a kind of soft (leaf) fiber.*

REPLANTING

(September)



Wire to secure bonsai

Spread a thin layer of soil mix.

Spread a base fertilizer of bone meal or Magamp K.

Gravel

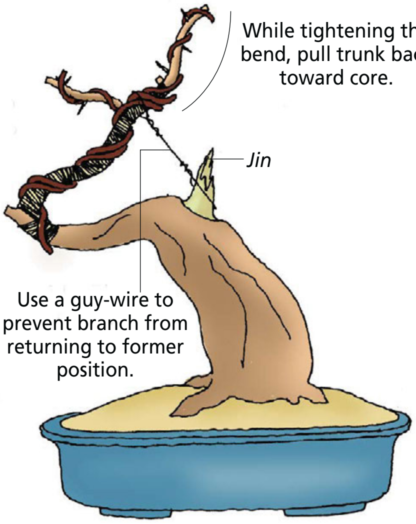
Secure tree.

Replenish soil mix.

Make a mound of soil mix and secure tree on top.

Prevent any direct contact between the roots and fertilizer.

AFTER PRUNING

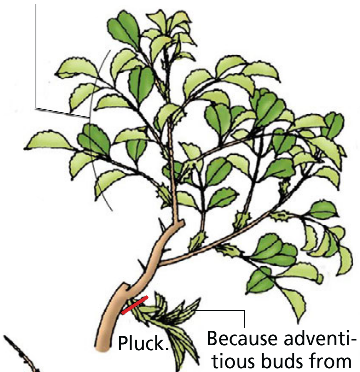


While tightening the bend, pull trunk back toward core.

Use a guy-wire to prevent branch from returning to former position.

WIRING

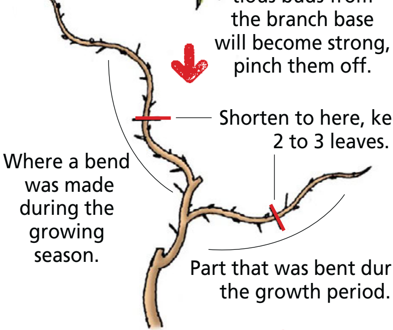
(June)



Fix any bends with wire while the branch is still flexible.

Pluck.

Because adventitious buds from the branch base will become strong, pinch them off.



Shorten to here, keeping 2 to 3 leaves.

Where a bend was made during the growing season.

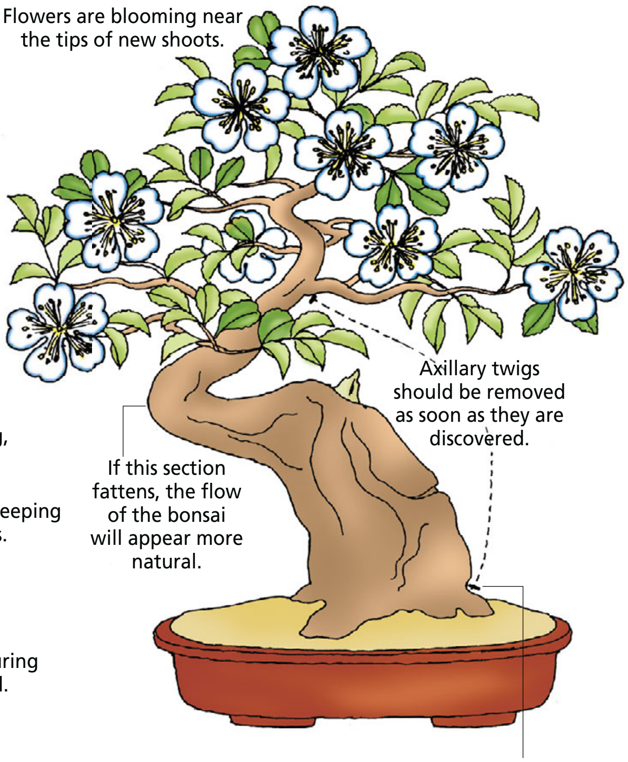
Part that was bent during the growth period.

PRUNING

Falling leaves (wintering)

HOW THE BONSAI APPEARS IN THE FUTURE

(June)



Flowers are blooming near the tips of new shoots.

Axillary twigs should be removed as soon as they are discovered.

If this section fattens, the flow of the bonsai will appear more natural.

Remove suckers* as soon as you discover them.

**Suckers: Adventitious shoots that emerge from tree root bases and tend to become long branches.*

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting				Layering & Cutting					Seeding	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Wiring							
Sterilization		Winter		Growth period								Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (May–June)						Prime • Fruiting (October–November)		

Chinese Quince

JAPANESE NAME
Boke

ALTERNATIVE NAMES
Karaboke, Moke

SCIENTIFIC NAME
Chaenomeles japonica

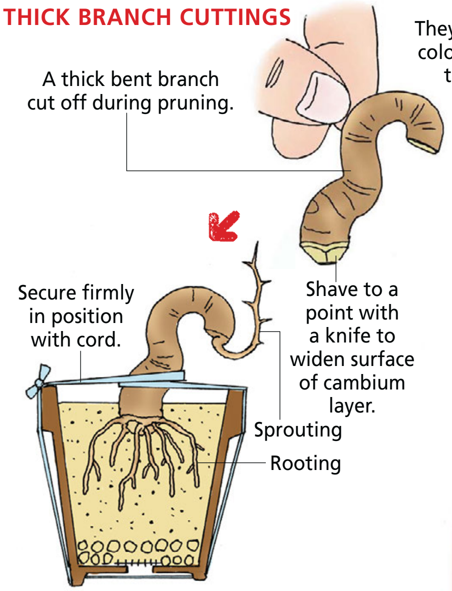
CLASSIFICATION
Flowering quince, Rose (deciduous broad-leaved tree / shrub)

SYMBOLIC OF
Health, Enthusiasm

FLOWERING
March to May

Blossoming while the chill of winter remains, reminding us that spring is close. Flowers of red, pink, white and so on open before leaves appear. These flowers have five petals and diameters of around 1 or 2 inches (2 to 5 cm), and bloom in every season. Varieties with scarlet flowers are called *hi-boke*, and those with white flowers are called *shiro-boke*.

PROPAGATING WITH THICK BRANCH CUTTINGS



A thick bent branch cut off during pruning.

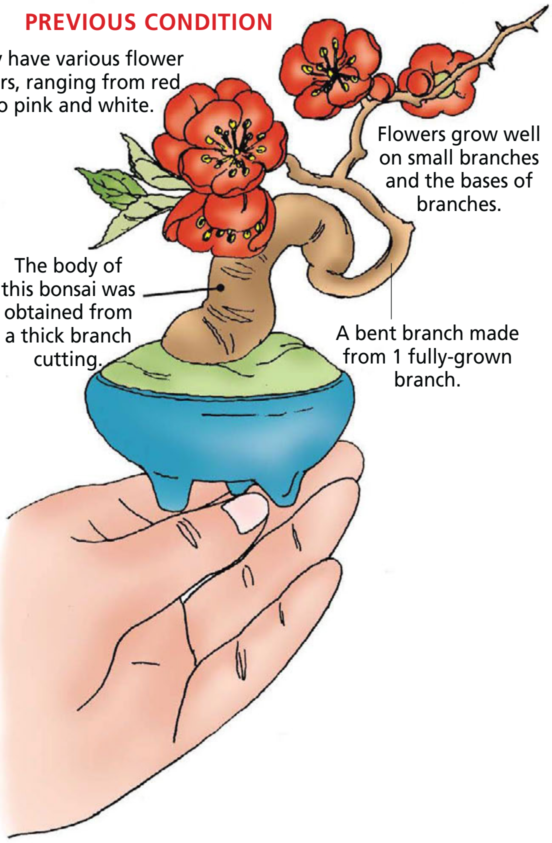
Secure firmly in position with cord.

Shave to a point with a knife to widen surface of cambium layer.

Sprouting

Rooting

PREVIOUS CONDITION



They have various flower colors, ranging from red to pink and white.

Flowers grow well on small branches and the bases of branches.

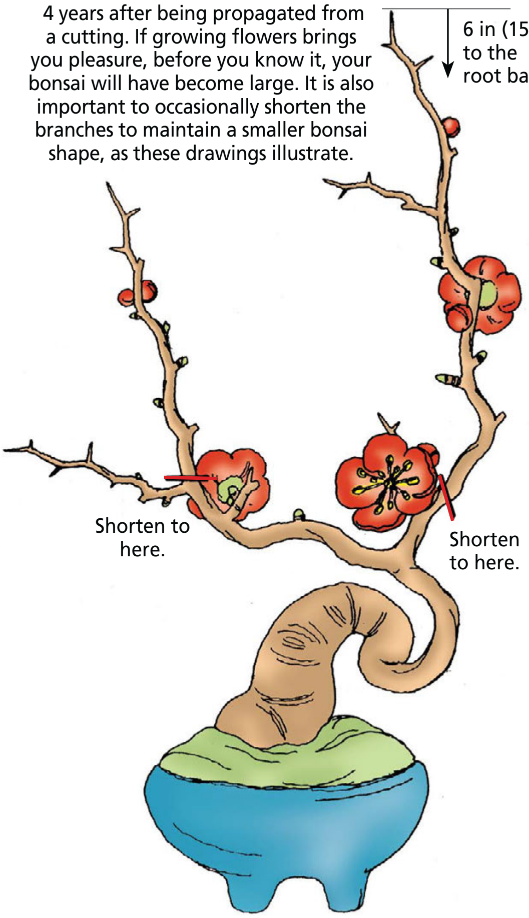
The body of this bonsai was obtained from a thick branch cutting.

A bent branch made from 1 fully-grown branch.

CURRENT CONDITION

(March to April)

4 years after being propagated from a cutting. If growing flowers brings you pleasure, before you know it, your bonsai will have become large. It is also important to occasionally shorten the branches to maintain a smaller bonsai shape, as these drawings illustrate.



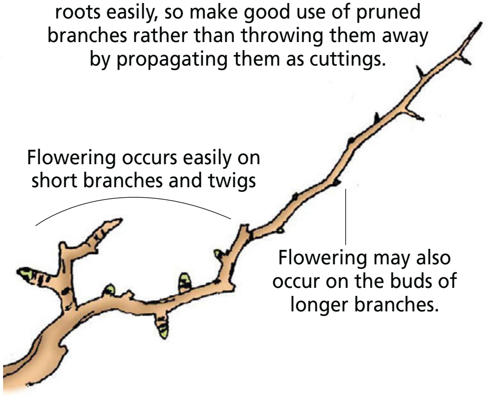
6 in (15 cm) to the root base

Shorten to here.

Shorten to here.

GUIDE TO BEARING FLOWER BUDS

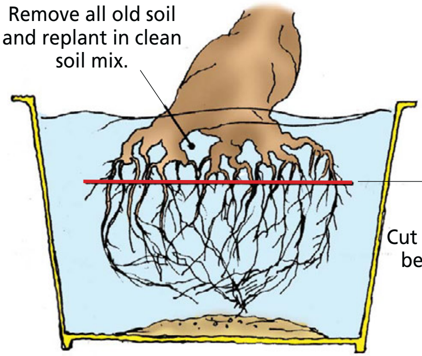
Thick cuttings refer to planting a thick section of branch or trunk about the width of a thumb. Thicker material develops roots easily, so make good use of pruned branches rather than throwing them away by propagating them as cuttings.



Flowering occurs easily on short branches and twigs

Flowering may also occur on the buds of longer branches.

REPLANTING



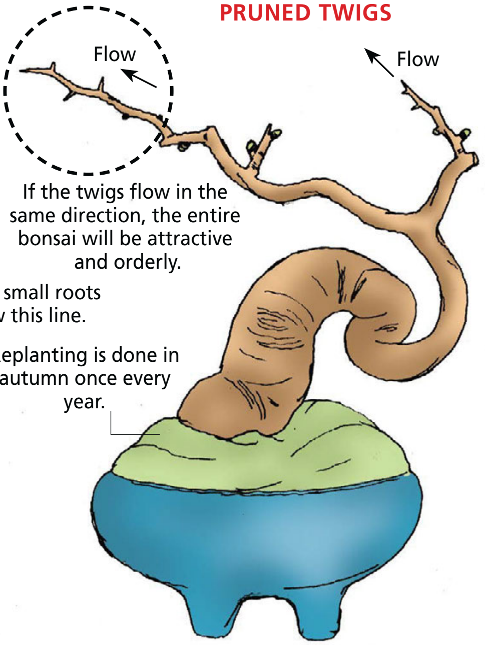
Remove all old soil and replant in clean soil mix.

Cut off small roots below this line.

Wash with water.

Use a trisodium phosphate solution to sterilize tools that have had contact with soil with *agrobacterium tumefaciens*. Refer to page 50.

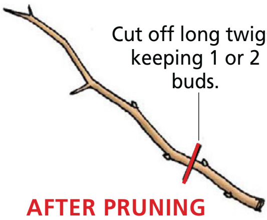
PRUNED TWIGS



If the twigs flow in the same direction, the entire bonsai will be attractive and orderly.

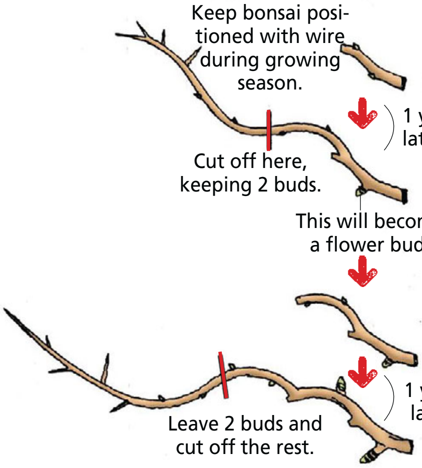
Replanting is done in autumn once every year.

TWIG SHAPING



Cut off long twigs, keeping 1 or 2 buds.

AFTER PRUNING



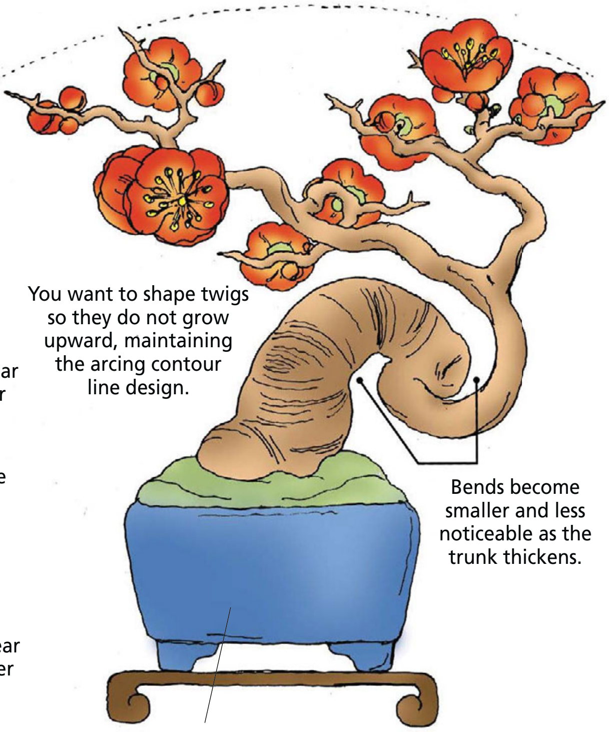
Keep bonsai positioned with wire during growing season.

Cut off here, keeping 2 buds.

This will become a flower bud.

Leave 2 buds and cut off the rest.

HOW THE BONSAI APPEARS AFTER FIVE YEARS



You want to shape twigs so they do not grow upward, maintaining the arcing contour line design.

Bends become smaller and less noticeable as the trunk thickens.

A square pot of blue, white, yellow or similar color.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Cutting				Pruning	Winter		
March								
April		2–3 times / day			Pruning			Growth period • Flowering (March–April)
May			Add fertilizer		Wiring	Growth period		
June	Layering & Cutting							
July		3–4 times / day	Water & fertilizer	Growing stage				
August								
September		2–3 times / day	Add fertilizer					
October								Prime
November								
December						Winter		

Reeve's Spiraea

JAPANESE NAME
Kodemari

ALTERNATIVE NAMES
Bridalwreath spirea, Double White May, Cape May or May Bush

SCIENTIFIC NAME
Spiraea cantoniensis

CLASSIFICATION
Meadowsweets / Rose

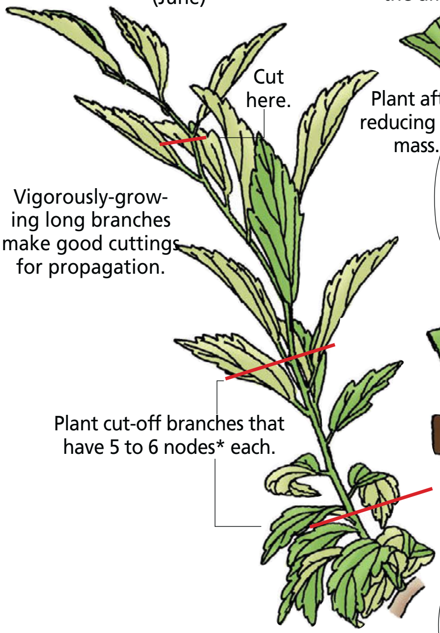
SYMBOLIC OF
Elegance, Hard work

FLOWERING
April to May

Little, five-petal white flowers grow and bloom in hemispherical clusters. The source of the Japanese name is due to the way the shape and appearance of the clusters of flowers on some parts of the branches are similar to *temari*, the small handmade fabric and thread balls used for playing a traditional children's game. As it is a resilient tree, propagating with cuttings is recommended.

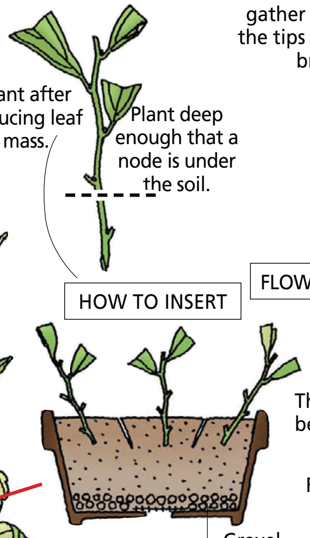
PROPAGATING WITH CUTTINGS

(June)


Cut here.
Vigorously-growing long branches make good cuttings for propagation.
Plant cut-off branches that have 5 to 6 nodes* each.

CUTTINGS FOR PROPAGATION

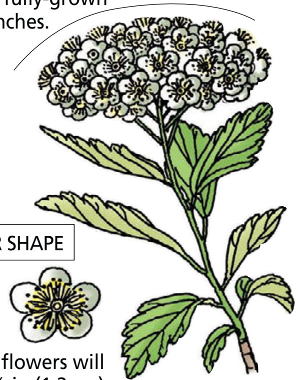
Reintroduce after reducing the amount of leaves.


Plant after reducing leaf mass.
Plant deep enough that a node is under the soil.
HOW TO INSERT
Gravel

Soil composition
Fine grade *Akadama* soil
Fine grade *Kiryu* sand or similar

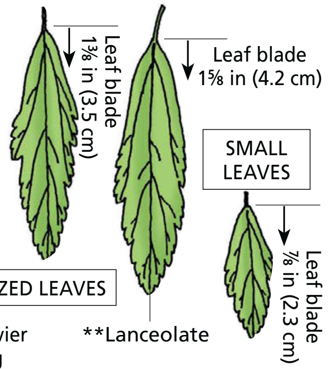
FLOWERING

(May)


Small white flowers gather and bloom at the tips of fully-grown branches.
1 to 1⅛ in (2.5 to 3 cm)
FLOWER SHAPE
The flowers will be ½ in (1.2 cm) and white.

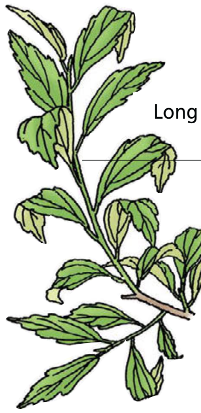
For best exposure to sunlight, plant cuttings upright in the center. As you plant cuttings closer toward the edge of the pot, plant them at increasing angles.

SHAPE OF LEAF


BIG LEAVES
Leaf blade 1⅜ in (3.5 cm)
Leaf blade 1⅝ in (4.2 cm)
SMALL LEAVES
Leaf blade ⅞ in (2.3 cm)
MID-SIZED LEAVES
**Lanceolate

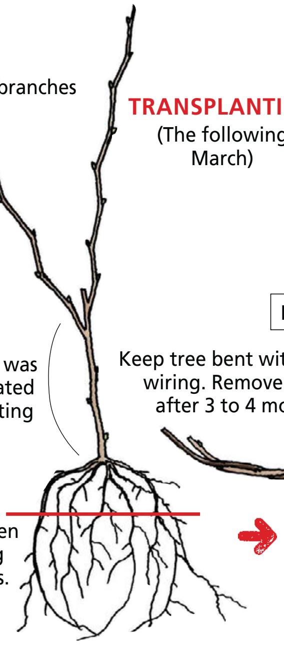
BRANCH SHAPING & WIRING

(June)


Long branch
Short twig

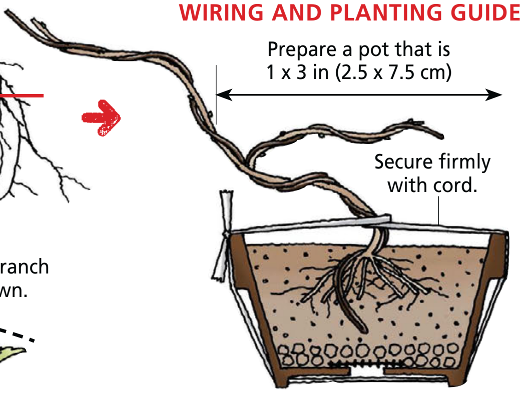
TRANSPLANTING

(The following March)

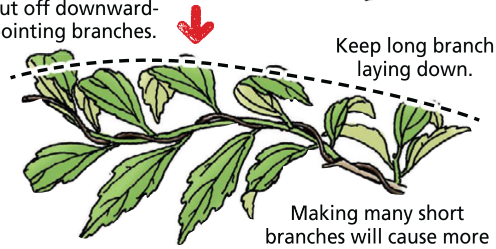

Fully-grown branches
When it was propagated as a cutting
Shorten long roots.

Keep tree bent with heavier wiring. Remove wiring after 3 to 4 months.

WIRING AND PLANTING GUIDE


Prepare a pot that is 1 x 3 in (2.5 x 7.5 cm)
Secure firmly with cord.

Soil composition
70% Akadama soil 1/32 to ⅛ in (1 to 4 mm)
30% Kiryu sand 1/32 to ⅛ in (1 to 4 mm)
+ about 5% bamboo charcoal

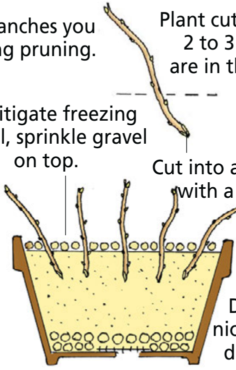

Cut off downward-pointing branches.
Keep long branch laying down.

Making many short branches will cause more flower buds to grow.

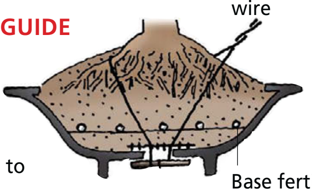
**Node: The section where leaves are attached to a stem, or where branches extend from the trunk.*
***Lanceolate: Shaped like a lozenge or spear tip. Refer to "Various Shapes of Leaves" on page 191.*

PROPAGATING WITH CUTTINGS

(Dormant period)


Plant the branches you cut off during pruning.
Keeping more branch length means less energy for budding.
Plant cuttings so 2 to 3 buds are in the soil.
To mitigate freezing topsoil, sprinkle gravel on top.
Cut into a V shape with a knife.
Develops roots nicely even during dormant period

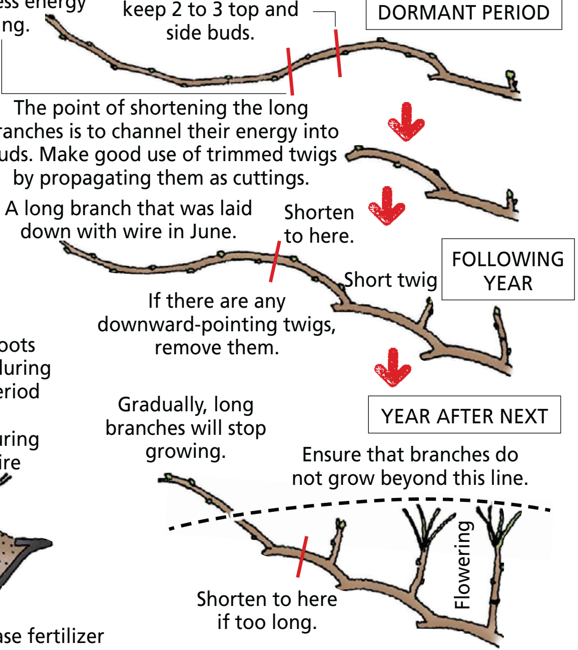
PLANTING GUIDE


Securing wire
Base fertilizer (bone meal or similar) under soil mix

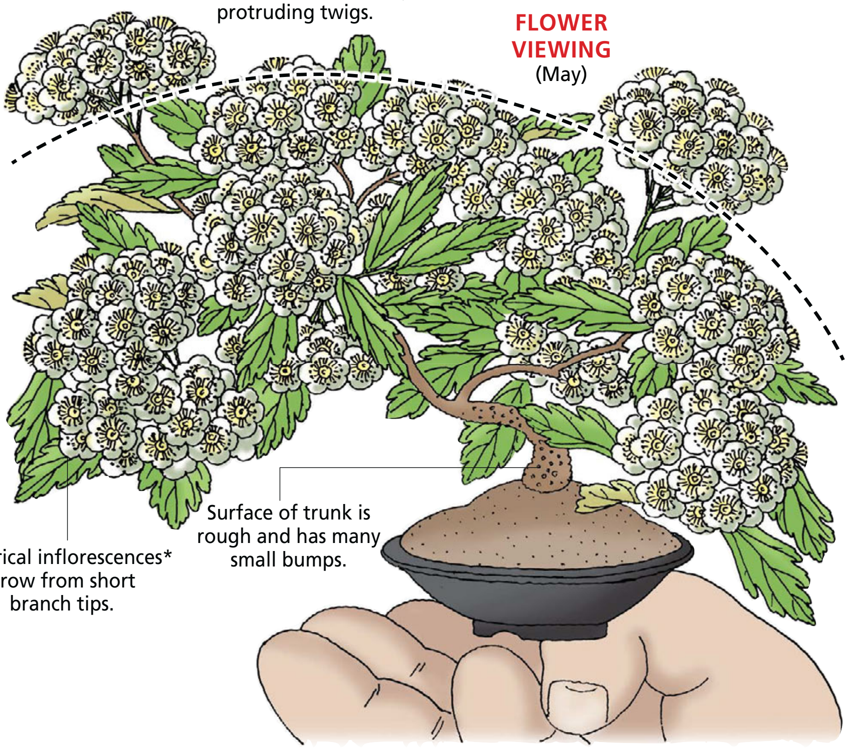
Soil composition

80% *Akadama* soil
20% *Kiryu* sand $^1/_{32}$ to ⅛ in (1 to 4 mm)
+ 5% bamboo charcoal

PRUNING


DORMANT PERIOD
Shorten to here but keep 2 to 3 top and side buds.
The point of shortening the long branches is to channel their energy into buds. Make good use of trimmed twigs by propagating them as cuttings.
A long branch that was laid down with wire in June.
Shorten to here.
FOLLOWING YEAR
Short twig
If there are any downward-pointing twigs, remove them.
YEAR AFTER NEXT
Gradually, long branches will stop growing.
Ensure that branches do not grow beyond this line.
Flowering
Shorten to here if too long.
Short branches become flowering branches.

How bonsai appears after several years


Train the bonsai to form an arc shape, without any protruding twigs.
FLOWER VIEWING
(May)
Spherical inflorescences* grow from short branch tips.
Surface of trunk is rough and has many small bumps.

---

* Inflorescence: The situation where more than one flower is attached to a single flower stalk.

**Flower bud differentiation: After germinating, plants grow buds that become large leaves and stems, and eventually, for the purposes of propagation, via differentiation, some buds become flowers.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Split stock • Cutting						▨	
April		2–3 times / day						Growth period • Flowering (April–May)
May			Add fertilizer			Growth period		
June	Layering & Cutting				Pruning • Wiring			
July		3–4 times / day	Water & fertilizer	Shading			▨	
August							▨	
September		2–3 times / day	Add fertilizer					
October								Peak condition phase and flower bud differentiation** (October)
November								
December				▨		Winter		▨

Azalea Rhododendron

JAPANESE NAME
Satsuki

ALTERNATIVE NAMES
Tsutsusi

SCIENTIFIC NAME
Rhododendron indicum

CLASSIFICATION
Azalea (evergreen hardwood / shrub)

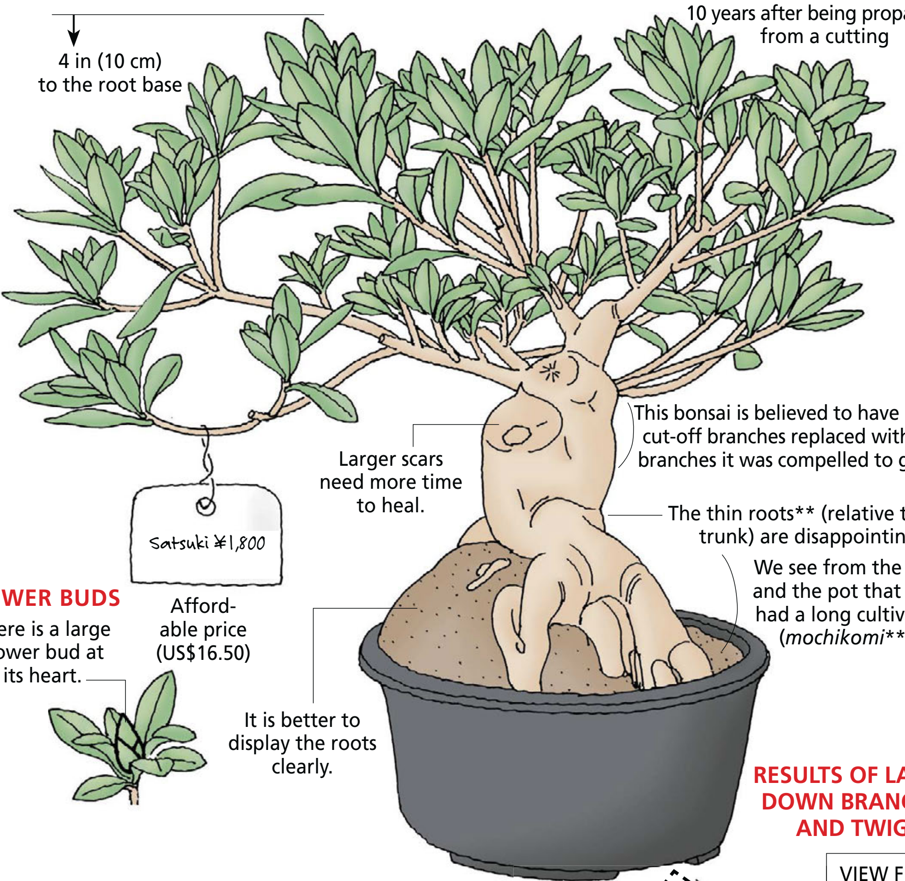
SYMBOLIC
Shyness

FLOWERING
May to June

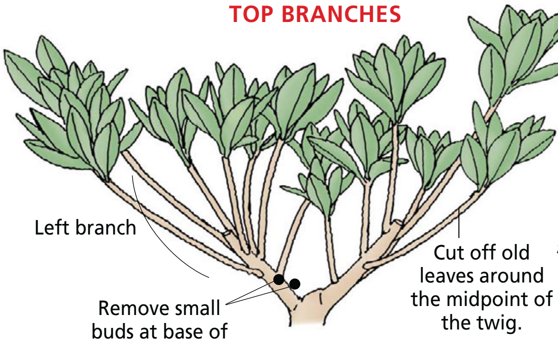
Named after the month of *satsuki* in the Japanese lunar calendar (roughly falling between late May and early July), when they bloom. While azalea flowers typically bloom before their leaves unfold, the small flowers of *satsuki* open after new shoots unfurl and are a deep magenta. Propagating with cuttings is recommended.

PRIOR TO CARE

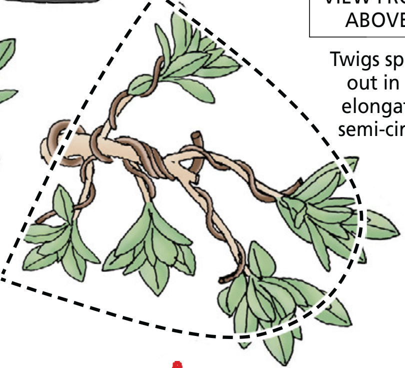
10 years after being propagated from a cutting


4 in (10 cm)
to the root base
Satsuki ¥1,800
Larger scars need more time to heal.
This bonsai is believed to have had its cut-off branches replaced with new branches it was compelled to grow.*
The thin roots** (relative to the trunk) are disappointing.
We see from the roots and the pot that it has had a long cultivation (*mochikomi****).
It is better to display the roots clearly.
Affordable price (US$16.50)
FLOWER BUDS
There is a large flower bud at its heart.

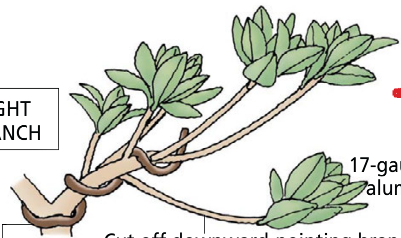
LAYING DOWN TOP BRANCHES


Left branch
Remove small buds at base of branch.
Cut off old leaves around the midpoint of the twig.

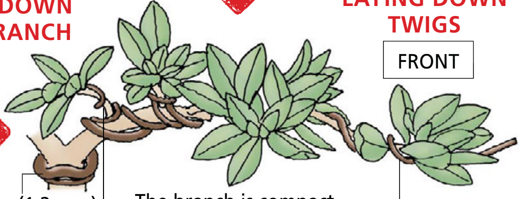
RESULTS OF LAYING DOWN BRANCHES AND TWIGS


VIEW FROM ABOVE
Twigs spread out in an elongated semi-circle.

LAYING DOWN MAIN BRANCH


RIGHT BRANCH
17-gauge (1.2-mm) aluminum wire
Cut off downward-pointing branches. Even if they are left alone, they will wither, so they should be cut off.

LAYING DOWN TWIGS

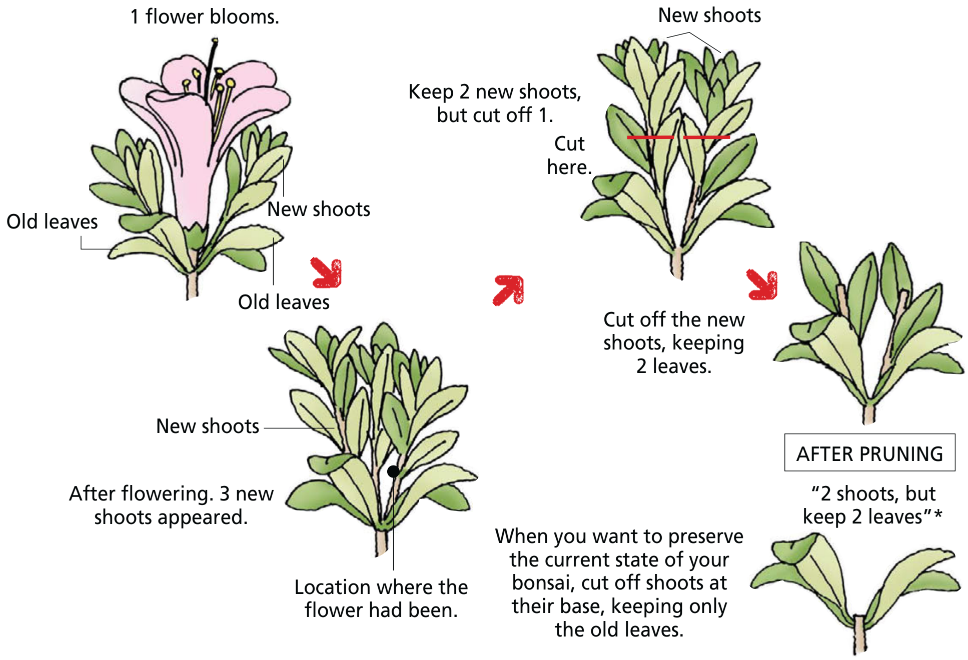

FRONT
17-gauge (1.2-mm) aluminum wire
18-gauge (1-mm) aluminum wire
The branch is compact and receives more sunlight.
17-gauge (1.2-mm) aluminum wire

**Compulsory growth: When a tree is forced to produce new branches from due to the condition of having no branches.*

***Thin roots: When roots are extremely thin compared to the root base.*

***Mochikomi*: *The length of time the bonsai has been cultivated, often meaning how old the bonsai appears to be, but occasionally its actual physical age.*

PRUNING AFTER *SATSUKI* HAS FLOWERED

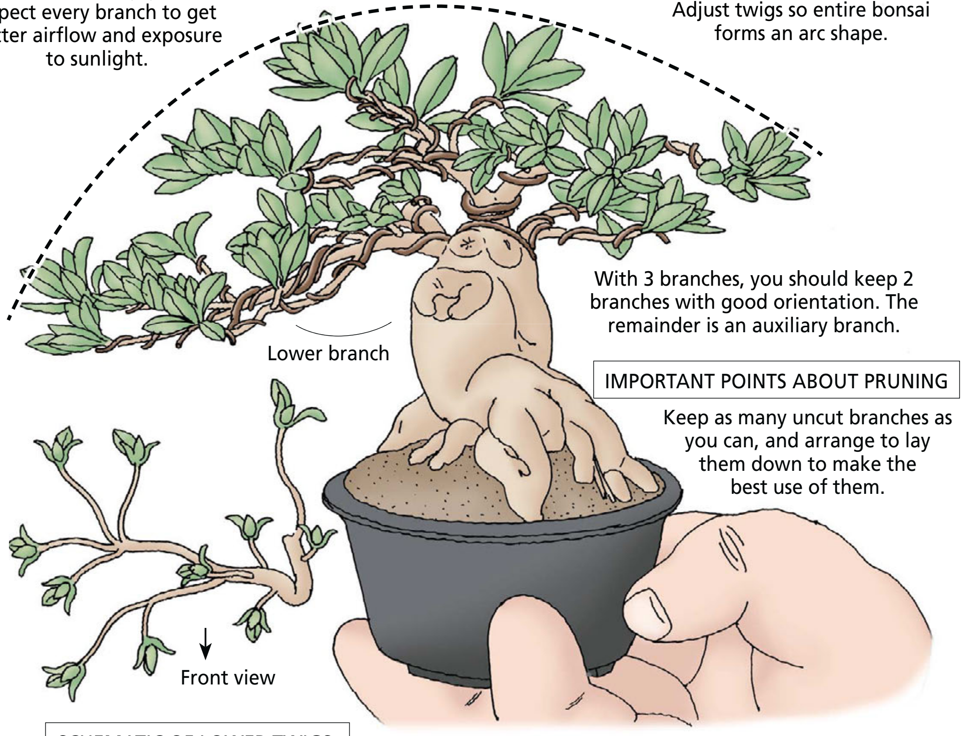

1 flower blooms.
Old leaves
New shoots
Old leaves
New shoots
After flowering. 3 new shoots appeared.
Location where the flower had been.
New shoots
Keep 2 new shoots, but cut off 1.
Cut here.
Cut off the new shoots, keeping 2 leaves.
AFTER PRUNING
"2 shoots, but keep 2 leaves"*

When you want to preserve the current state of your bonsai, cut off shoots at their base, keeping only the old leaves.

AFTER TRIMMING

Adjust twigs so entire bonsai forms an arc shape.

If branches are kept laying down horizontally, you can expect every branch to get better airflow and exposure to sunlight.


Lower branch
Front view

With 3 branches, you should keep 2 branches with good orientation. The remainder is an auxiliary branch.

IMPORTANT POINTS ABOUT PRUNING

Keep as many uncut branches as you can, and arrange to lay them down to make the best use of them.

SCHEMATIC OF LOWER TWIGS, VIEWED FROM ABOVE

(Leaves and wiring not shown)

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Cutting						▨	
April		2–3 times / day	Add fertilizer			Growth period		Growth period • Flowering (May–June) • Sprout separating (July–August)
May								
June	Layering • Cutting				Pruning • Wiring			
July		3–4 times / day	Water & fertilizer	Shading			▨	
August							▨	
September		2–3 times / day	Add fertilizer					
October								Prime
November								
December		▨		▨		Winter		▨

"(Prune) two shoots, but keep two leaves": This is an expression related to satsuki bonsai. To prune without harming the tree, beginners are reminded to keep two leaves when they cut off shoots.

Stachyurus Praecox

JAPANESE NAME
Kibushi

ALTERNATIVE NAMES
Early *stachyurus*

SCIENTIFIC NAME
Stachyurus praecox

CLASSIFICATION
***Stachyuraceae* (deciduous broad-leaved tree / shrub)**

SYMBOLIC OF
Meeting

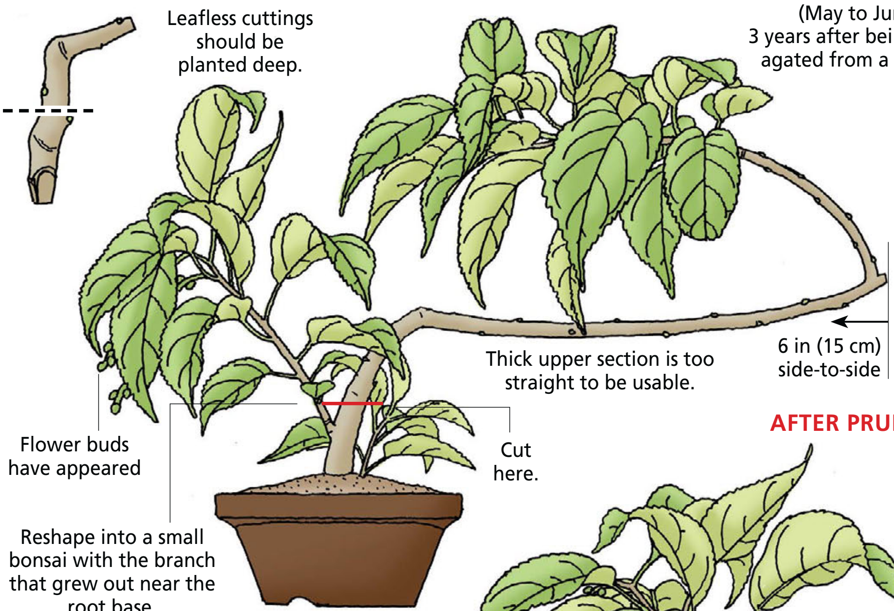
FLOWERING
March to April

In early spring, before there are leaves, there are the male flowers, whose pale yellow florets hang down like beaded door curtains. A dioecious* tree, the female flowers are a lush green with four petals. Growing wild in the mountains of rural Japan, their flowers bloom in much the same the way as Japanese wisteria. The male tree is characterized by dense clusters of bright yellow flowers.

PROPAGATING WITH CUTTINGS 1

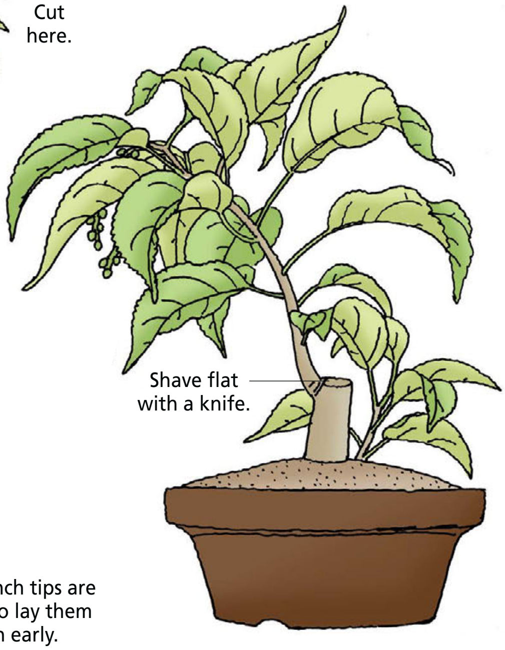
PRIOR TO CARE

(May to June)
3 years after being propagated from a cutting


Leafless cuttings should be planted deep.
Flower buds have appeared
Reshape into a small bonsai with the branch that grew out near the root base.
Thick upper section is too straight to be usable.
6 in (15 cm) side-to-side
Cut here.

No. 2.5 pot (3 in / 7.5 cm)

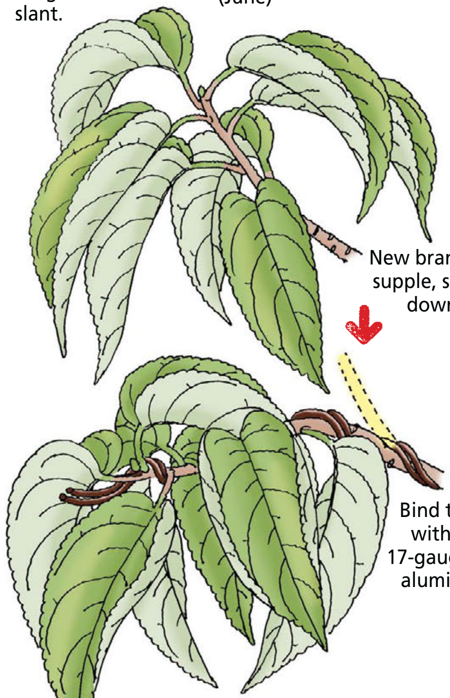
AFTER PRUNING


Shave flat with a knife.

WIRING

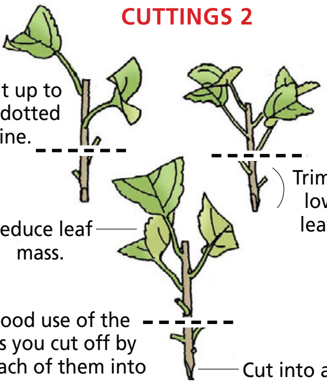
(June)

A new shoot growing at a slant.


New branch tips are supple, so lay them down early.
Bind the branch with doubled 17-gauge (1.2-mm) aluminum wire.

Around October, flower buds will begin to appear, growing from leaf axils and gradually lengthening.

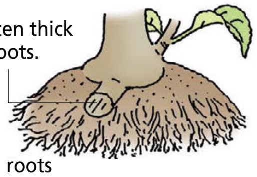
PROPAGATING WITH CUTTINGS 2


Plant up to the dotted line.
Trim the lower leaves.
Reduce leaf mass.
Cut into a V shape.

Make good use of the branches you cut off by cutting each of them into sections of 4 to 6 nodes and propagating them as cuttings.

**Dioecious: Any type of plant where the male and female flowers are produced on different trees, dividing them into male and female trees. For example, ginkgo biloba,* Ilex serrata *and so on.*

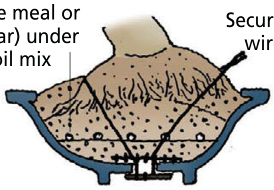
AFTER ROOT SHORTENING



Shorten thick roots.

Thin roots grow easily.

PLANTING GUIDE



Base fertilizer (bone meal or similar) under soil mix

Securing wire

Soil composition

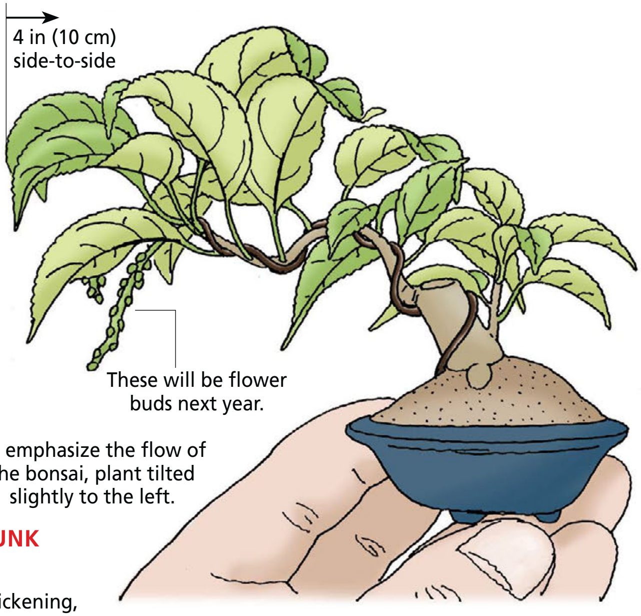
80% *Akadama* soil 1/32 to ⅛ in (1 to 4 mm)

20% *Kiryu* sand 1/32 to ⅛ in (1 to 4 mm)

+ about 5% bamboo charcoal

AFTER PLANTING

Use a wire to bend the branch.

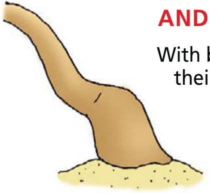


4 in (10 cm) side-to-side

These will be flower buds next year.

To emphasize the flow of the bonsai, plant tilted slightly to the left.

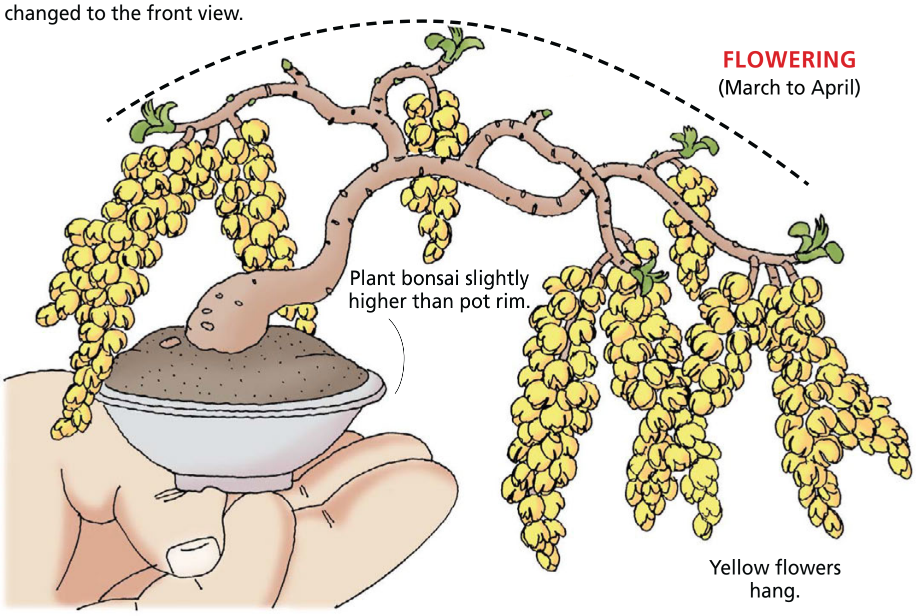
RELATIONSHIP OF TRUNK AND BRANCHES



With branch bases thickening, their relationship with the trunk will become more natural.

How the bonsai appears after several years

Train the branches to lay down. The reverse side has been changed to the front view.



Plant bonsai slightly higher than pot rim.

FLOWERING

(March to April)

Yellow flowers hang.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Cutting			Layering • Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Wiring							
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (March–April)						Prime		

Kousa Dogwood

JAPANESE NAME
Yamaboushi

ALTERNATIVE NAMES
Chinese dogwood, Korean dogwood and Japanese dogwood

SCIENTIFIC NAME
Cornus kousa

CLASSIFICATION
Dogwood (deciduous broad-leaved tree / *takagi*)

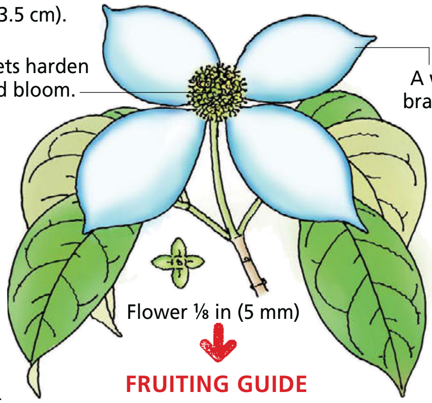
SYMBOLIC OF
Friendship

FLOWERING
June to July

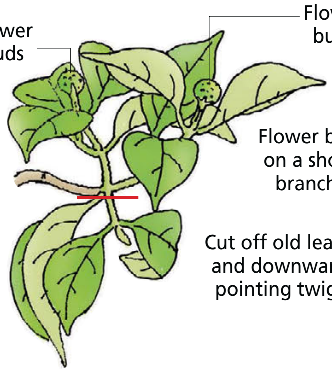
With flowers clustered in the center section, the four white petal-shaped objects are petaloid bract* leaves at the base of the inflorescence. Many spherical pale yellow-green florets are attached in the center. Their durability is excellent, and they can be viewed for a long time. Propagation can be done with cuttings, seed-grown seedlings, air-layering and so on.

FLOWERING GUIDE

(May to July)

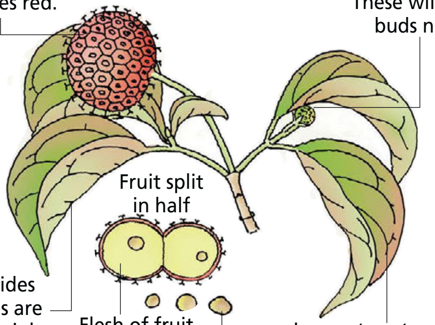

Diameter of petaloid bract is about 1⅜ in (3.5 cm).
Florets harden and bloom.
A white bract leaf
Flower ⅛ in (5 mm)

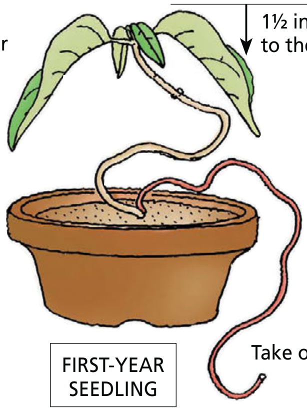
GUIDE TO BEARING FLOWER BUDS


Flower buds
Flower buds
Flower bud on a short branch.
Cut off old leaves and downward-pointing twigs.

FRUITING GUIDE

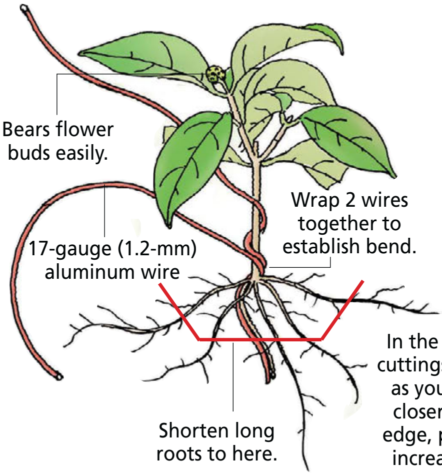
(October to November)


Fruit becomes red.
These will be flower buds next year.
Fruit split in half
Undersides of leaves are entirely pink.
Flesh of fruit (amber yellow)
Leaves turn to autumn colors (mingled with green leaves as well).
Seeds (yellowish-white) Diameter ⅛ in (5 mm)


1½ in (4 cm) to the root base
Take off wiring.
FIRST-YEAR SEEDLING

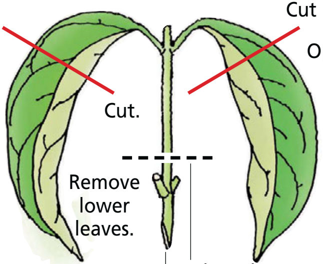
TRANSPLANT

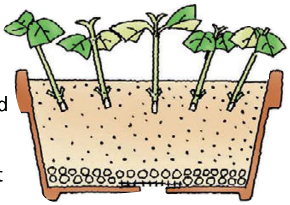
(March or June of the following year)


Bears flower buds easily.
Wrap 2 wires together to establish bend.
17-gauge (1.2-mm) aluminum wire
Shorten long roots to here.

PROPAGATING WITH CUTTINGS

(June)


Reduce leaf mass.
Cut here.
Opposite leaf pattern**
Cut.
Remove lower leaves.
Cut into a V-shape with a knife.
Plant deep enough for at least 1 node to be under the soil.

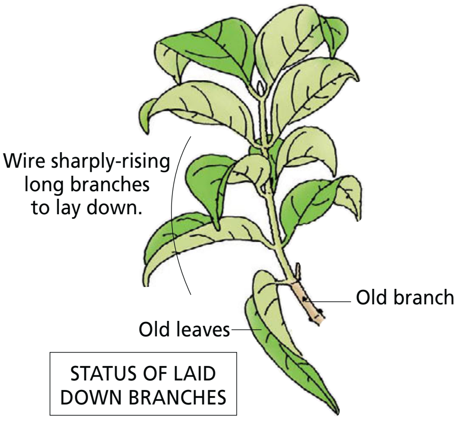

In the center, plant cuttings upright, and as you plant them closer toward the edge, plant them at increasing angles.
Soil mix is fine grade *Akadama* soil or fine grade *Kiryu* sand, or similar.

**Petaloid bracts: Bracts are leaves that had concealed flower buds. Every bract that is a bract leaf which conceals the entire base of an inflorescence is a petaloid bract. The individual whole bracts are called petaloid bract leaves.*

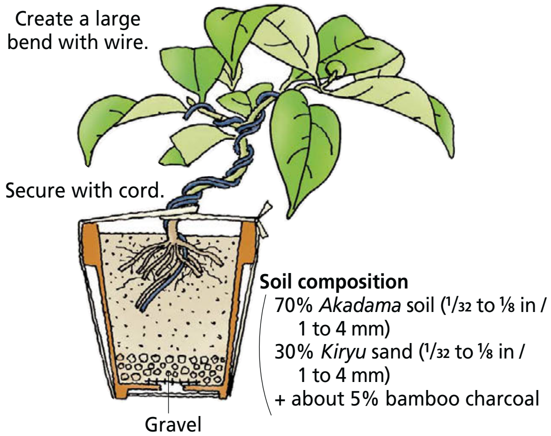
***Opposite leaf pattern: Refer to page 191, "Names of Leaf Parts and How They are Attached."*

WIRING LONG BRANCHES

(June)

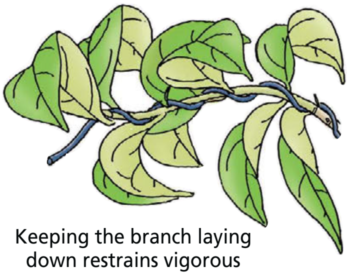

Wire sharply-rising long branches to lay down.
Old branch
Old leaves

PLANTING GUIDE


Create a large bend with wire.
Secure with cord.
Gravel

Soil composition
70% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
30% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

STATUS OF LAID DOWN BRANCHES

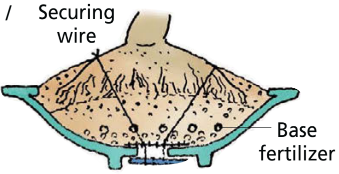


Keeping the branch laying down restrains vigorous growth, and you can expect better airflow and exposure to sunlight, as well as better buds.

Soil composition
80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

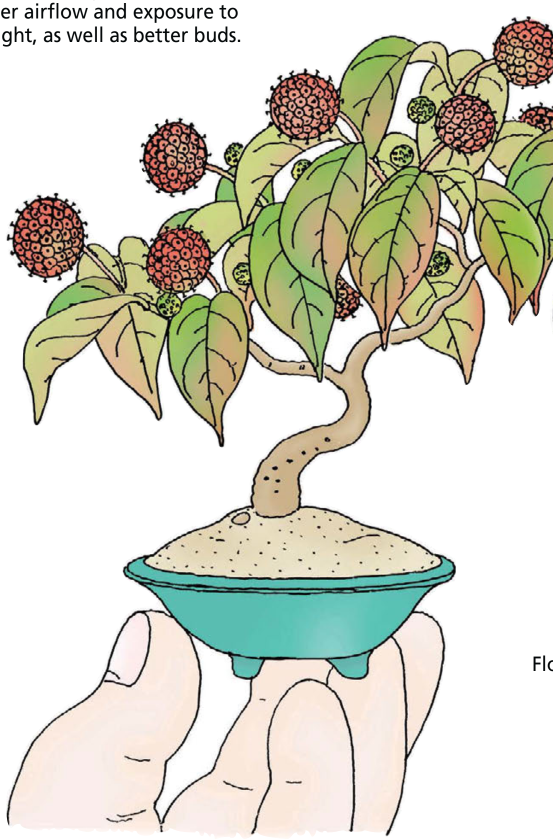
PLANTING GUIDE

(March)


Securing wire
Base fertilizer

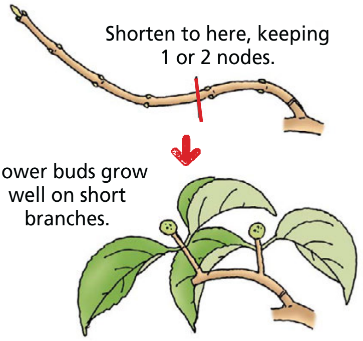
BEARING FRUIT

(November)
Condition after 4 to 5 years.



PRUNING

(Dormant period)


Shorten to here, keeping 1 or 2 nodes.
Flower buds grow well on short branches.

SCHEDULE	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Seedling			Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter		Growth period								Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (June–July)						Prime • Fruiting (November)		

Pomegranate

JAPANESE NAME
Zakuro

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Punica granatum

CLASSIFICATION
Pomegranate (deciduous hardwood / _kotakagi_)

SYMBOLIC OF
Maturity, Grace, Nurturing

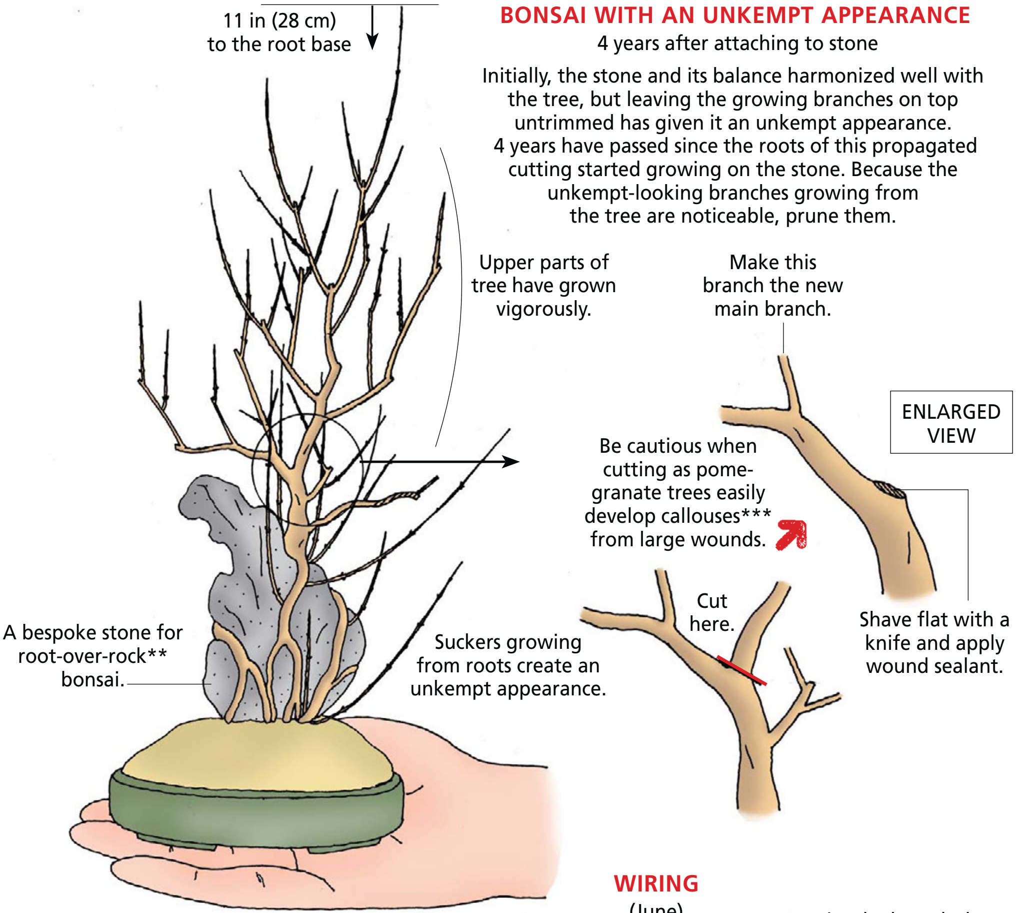
FLOWERING
June to July

On the tips of new branches, 6 roughly 2-in (5-cm) wrinkled cylindrical petals emerge from a cylindrical vermilion calyx.* As if crowding around them, the blooming petals surround countless yellow stamens in the center. Some cultivars are also double flowered. Propagating with cuttings is recommended.

BONSAI WITH AN UNKEMPT APPEARANCE

4 years after attaching to stone

Initially, the stone and its balance harmonized well with the tree, but leaving the growing branches on top untrimmed has given it an unkempt appearance. 4 years have passed since the roots of this propagated cutting started growing on the stone. Because the unkempt-looking branches growing from the tree are noticeable, prune them.


11 in (28 cm) to the root base
Upper parts of tree have grown vigorously.
Make this branch the new main branch.
ENLARGED VIEW
Be cautious when cutting as pomegranate trees easily develop callouses*** from large wounds.
Cut here.
Shave flat with a knife and apply wound sealant.
A bespoke stone for root-over-rock** bonsai.
Suckers growing from roots create an unkempt appearance.

AFTER ADJUSTING THE BONSAI

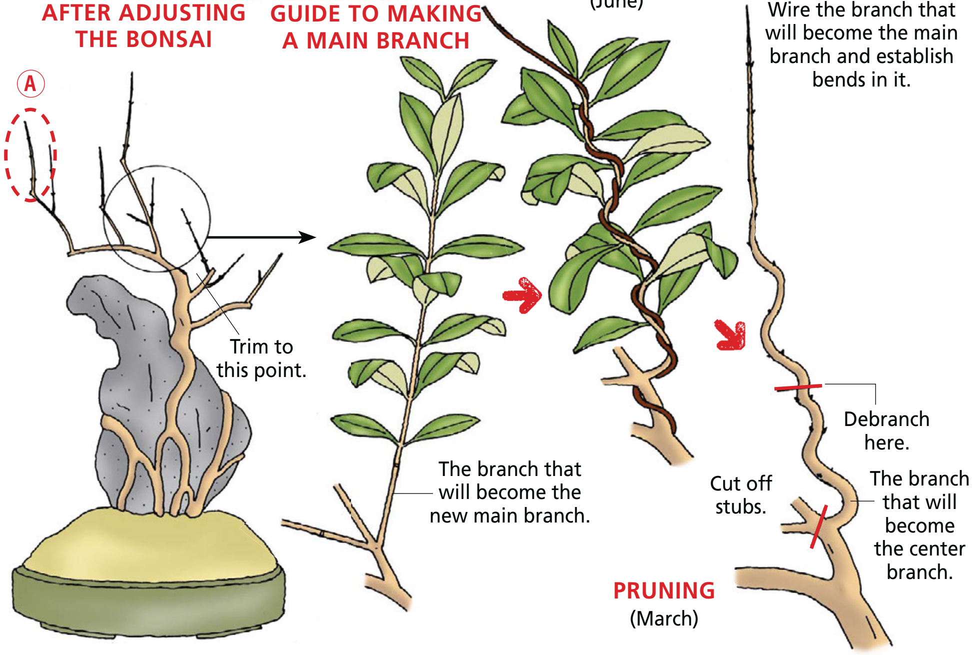
GUIDE TO MAKING A MAIN BRANCH

WIRING

(June)

PRUNING

(March)


Ⓐ
Trim to this point.
The branch that will become the new main branch.
Wire the branch that will become the main branch and establish bends in it.
Debranch here.
Cut off stubs.
The branch that will become the center branch.

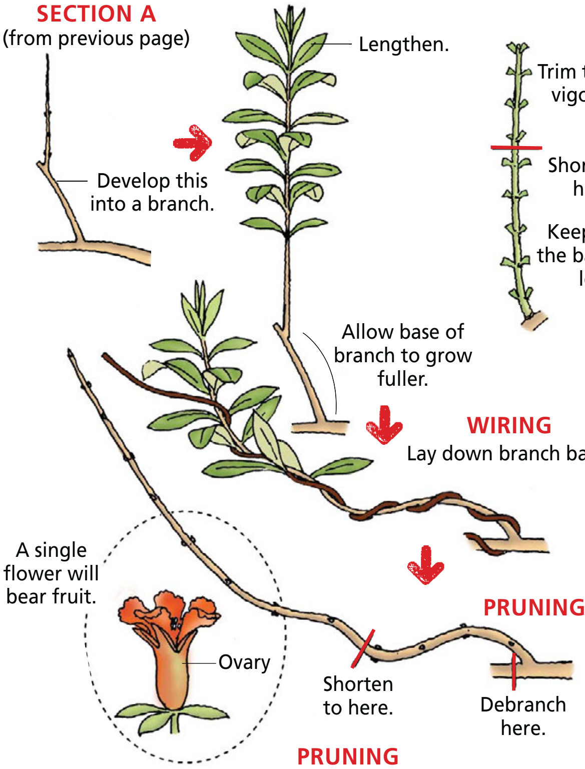
---

*Calyx: The calyx is a modified leaf, and the outermost part of the flower. In cases where the calyx separates at the base of the flower, each of these is known as a sepal.

**Root-over-rock bonsai: One form of bonsai where the tree has been planted on a stone to enhance its feeling of natural rustic beauty.

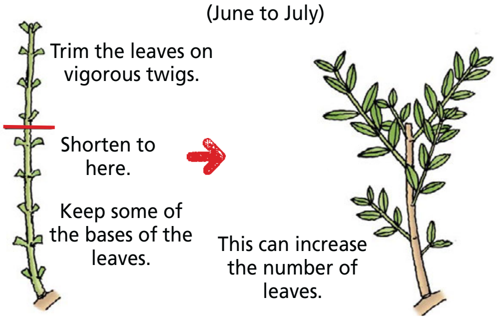
***Callous: The phenomenon where the tree dries out at the place where a branch was cut off and the cells die. To prevent this from happening, do not cut deep.

BRANCH RESHAPING GUIDE


SECTION A
(from previous page)
Lengthen.
Develop this into a branch.
Allow base of branch to grow fuller.
WIRING
Lay down branch base.
A single flower will bear fruit.
Ovary
Shorten to here.
PRUNING
Debranch here.
PRUNING

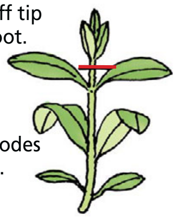
LEAF TRIMMING

(June to July)


Trim the leaves on vigorous twigs.
Shorten to here.
Keep some of the bases of the leaves.
This can increase the number of leaves.

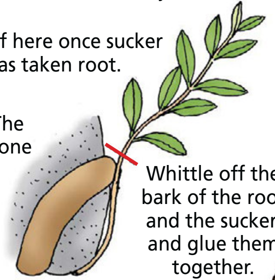
PINCHING OFF BUDS

(April to May)

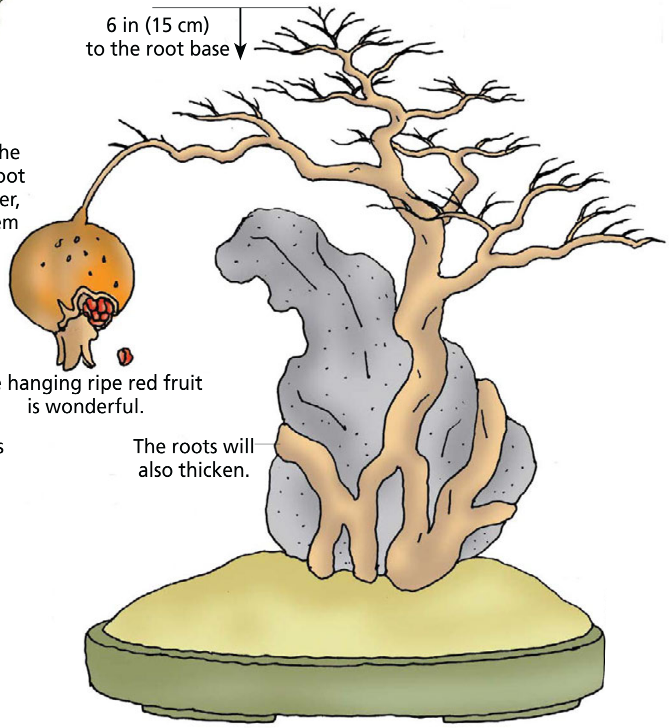

Pinch off tip of shoot.
Keep 3 nodes or so.

UTILIZING SUCKERS (ADVENTITIOUS SHOOTS)

(June to July)

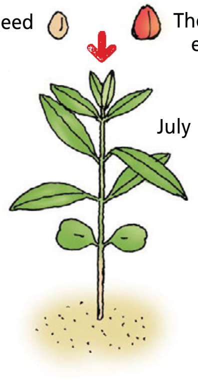

Cut off here once sucker has taken root.
The stone
Whittle off the bark of the root and the sucker, and glue them together.
The root
Use sucker as a root.

HOW BONSAI APPEARS IN THE FUTURE


6 in (15 cm) to the root base
The hanging ripe red fruit is wonderful.
The roots will also thicken.

SEEDLING

(November to December)
Planting harvested seeds.


Seed
The fruit is edible.
July

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seeding • Cutting						🟦	
April		2–3 times / day	Add fertilizer					Growth period • Flowering (June–July)
May					Wiring	Growth period		
June	Cutting							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November	Seedling			Winter				
December						Winter		

Crepe-Myrtle

JAPANESE NAME
Hyakujikou

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Lagerstroemia indica

CLASSIFICATION
Loosestrife family (deciduous broad-leaved tree / *kotakagi*)

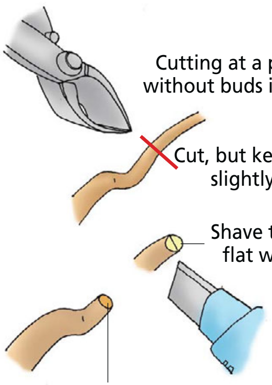
SYMBOLIC OF
Charm

FLOWERING
July to September

Between summer and autumn, the six fan-shaped purple petals of this red 1⅛-in (3-cm) flower open and bloom for long periods. It gets its name from the smooth bark that even monkeys, those dexterous tree climbers, seem to slide right off. Propagating with cuttings is recommended.

DEBRANCHING

Cut off with pruning clippers.



Cutting at a place without buds is fine.

Cut, but keep branch slightly long.

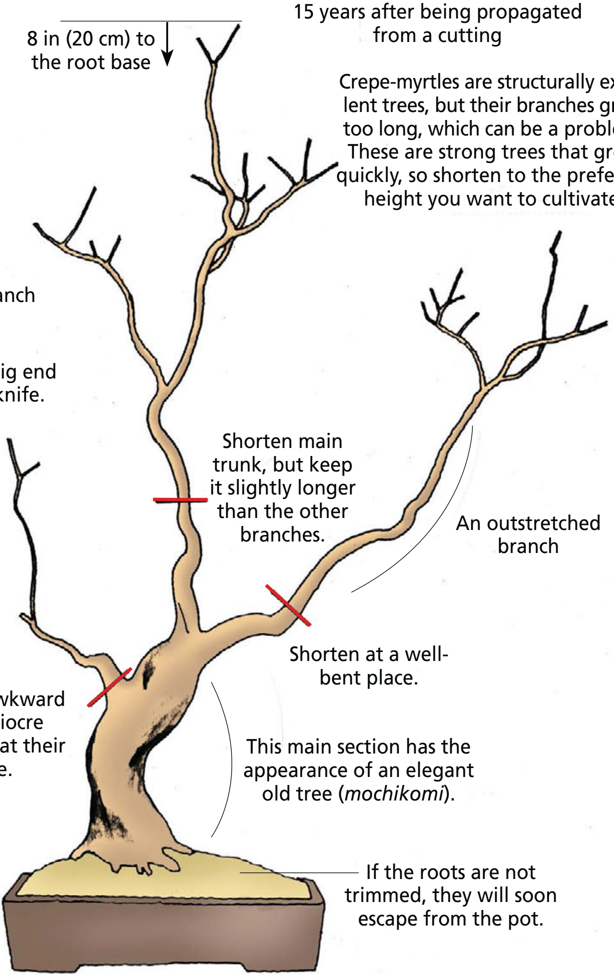
Shave the twig end flat with a knife.

Apply wound sealant to the cut end.

RESHAPING AN OVERGROWN BONSAI

(February)
15 years after being propagated from a cutting

Crepe-myrtles are structurally excellent trees, but their branches grow too long, which can be a problem. These are strong trees that grow quickly, so shorten to the preferred height you want to cultivate.



8 in (20 cm) to the root base

Shorten main trunk, but keep it slightly longer than the other branches.

An outstretched branch

Shorten at a well-bent place.

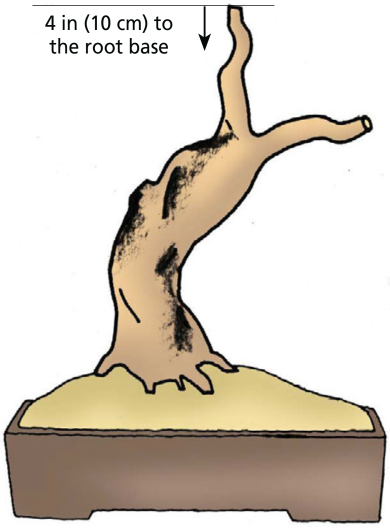
Cut off awkward or mediocre branches at their base.

This main section has the appearance of an elegant old tree (*mochikomi*).

If the roots are not trimmed, they will soon escape from the pot.

AFTER ADJUSTING THE BONSAI

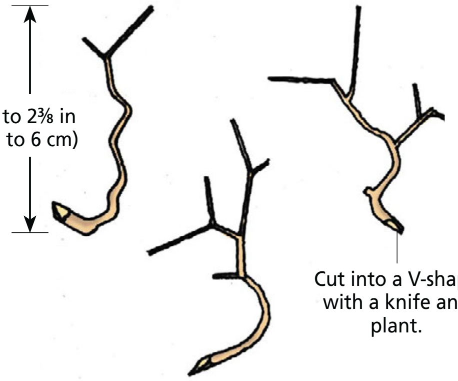
You should expect buds to emerge on the trunk



4 in (10 cm) to the root base

PROPAGATING WITH CUTTINGS

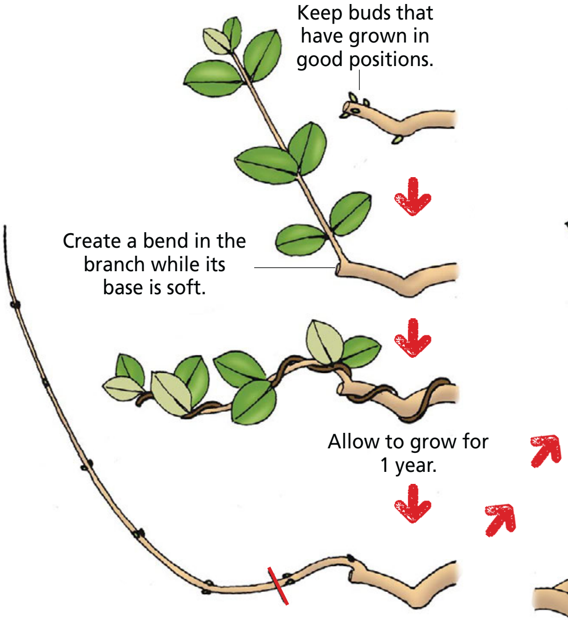
Make good use of cut-off twigs by propagating them as cuttings.



2 to 2⅜ in (5 to 6 cm)

Cut into a V-shape with a knife and plant.

BRANCH SHAPING



Keep buds that have grown in good positions.

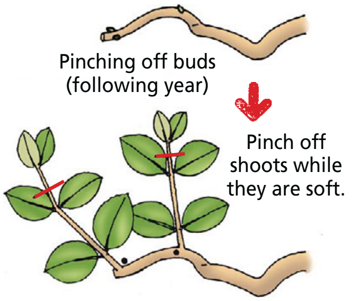
Create a bend in the branch while its base is soft.

Allow to grow for 1 year.

Shorten to here when leaves have fallen or, the following year, before buds appear.

AFTER PRUNING

(when leaves have fallen)

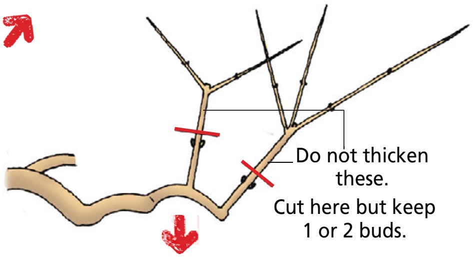


Pinching off buds (following year)

Pinch off shoots while they are soft.

Alternate pinching off shoots on 1 side at a time.

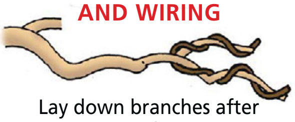
WIRING



Do not thicken these.

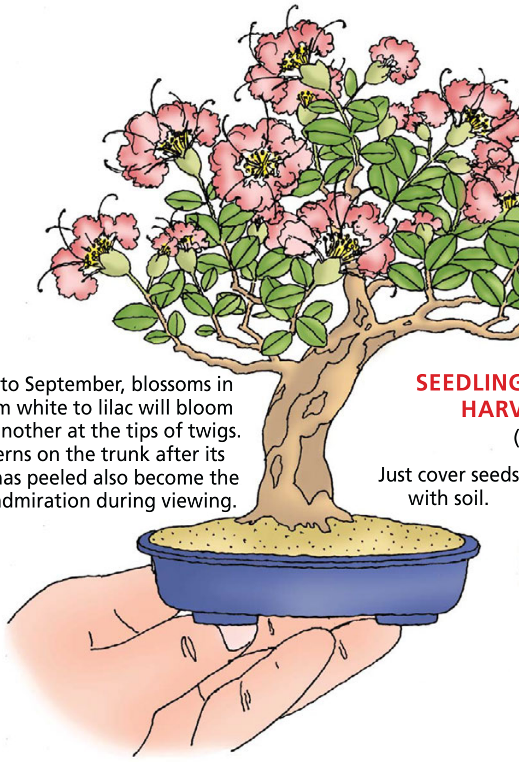
Cut here but keep 1 or 2 buds.

AFTER PRUNING AND WIRING



Lay down branches after pruning.

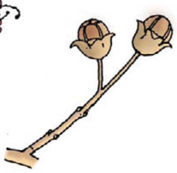
HOW THE BONSAI APPEARS WHILE FLOWERING



From July to September, blossoms in colors from white to lilac will bloom one after another at the tips of twigs. The patterns on the trunk after its thin bark has peeled also become the object of admiration during viewing.

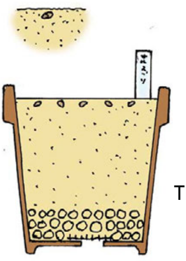
FRUITING GUIDE

In autumn, the bonsai bears fruit in those places where flowers had blossomed.

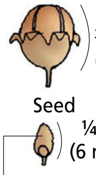


SEEDLINGS AND PLANTING HARVESTED SEEDS

(November)



Just cover seeds with soil.



Fruit shape

⅜ in (1 cm)

Seed

¼ in (6 mm)

The seed has a wing.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Cutting • Seedling				Pruning	Winter		
March								
April		2–3 times / day	Add fertilizer					Growth period • Flowering (July–September)
May					Wiring	Growth period		
June	Cutting • Layering							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime
November	Seedling							
December						Winter		

Star Magnolia

JAPANESE NAME
Shidekobushi

ALTERNATIVE NAMES
Star magnolia

SCIENTIFIC NAME
Magnolia stellata

CLASSIFICATION
Magnoliaceae
(deciduous broad-leaved tree / shrub)

SYMBOLIC OF
Welcome, Friendship

FLOWERING
March to April

Fragrant flowers, of either white or a pale red, bloom before the leaves have opened. Characterized by large buds that open to reveal flowers of 12 or more 1½-in (4-cm) petals, these are worth viewing, even if just one flower blooms. Propagating with cuttings or from seed-grown seedlings is recommended. Air-layering is recommended if causing flowers to bloom quickly is desired.

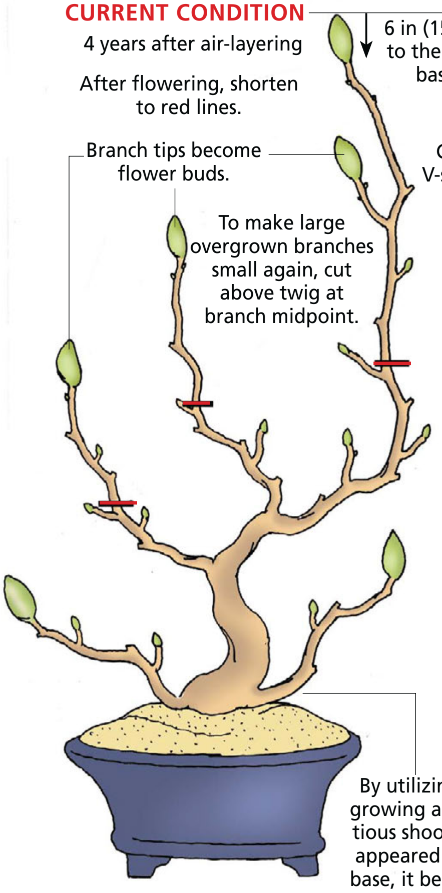
PROPAGATING WITH CUTTINGS

(Dormant period)

CURRENT CONDITION

4 years after air-layering

After flowering, shorten to red lines.

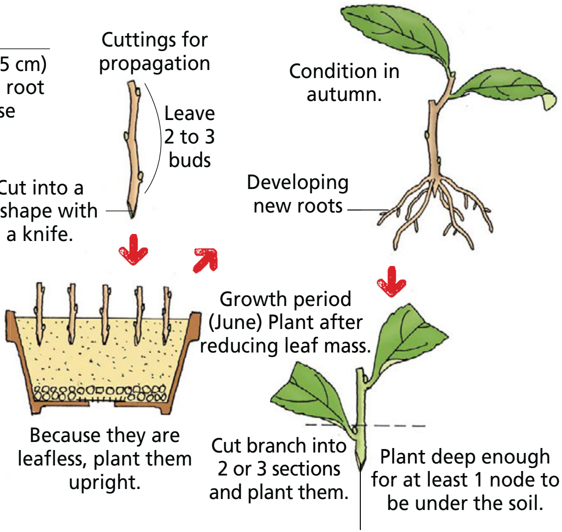


6 in (15 cm) to the root base

Branch tips become flower buds.

To make large overgrown branches small again, cut above twig at branch midpoint.

By utilizing the growing adventitious shoots that appeared at the base, it became a 3-trunk bonsai.



Cuttings for propagation

Leave 2 to 3 buds

Cut into a V-shape with a knife.

Because they are leafless, plant them upright.

Condition in autumn.

Developing new roots

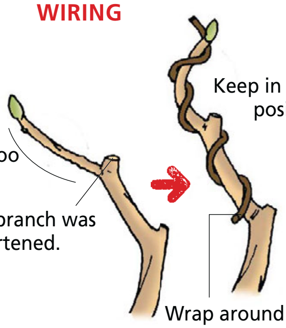
Growth period (June) Plant after reducing leaf mass.

Cut branch into 2 or 3 sections and plant them.

Plant deep enough for at least 1 node to be under the soil.

Cut into a V-shape with a knife.

WIRING



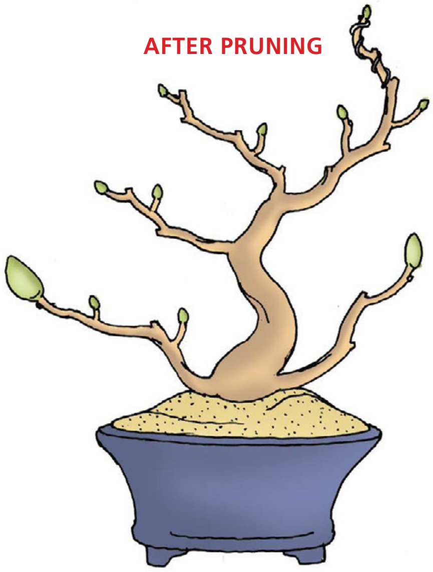
Branch is growing too horizontally.

Where branch was shortened.

Keep in corrected position.

Wrap around branch at least twice to secure it.

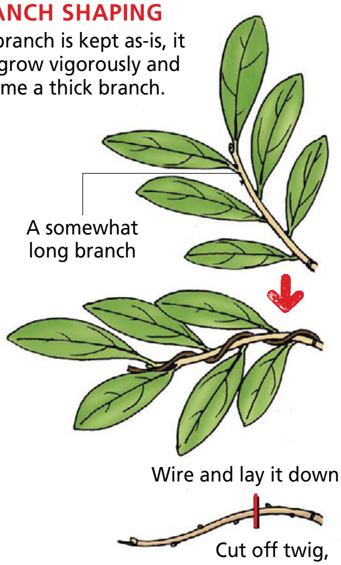
AFTER PRUNING



To improve the tree by tightening its shape, shorten long overgrown branches to cause more twigs to appear near the bases of branches.

BRANCH SHAPING

If this branch is kept as-is, it could grow vigorously and become a thick branch.

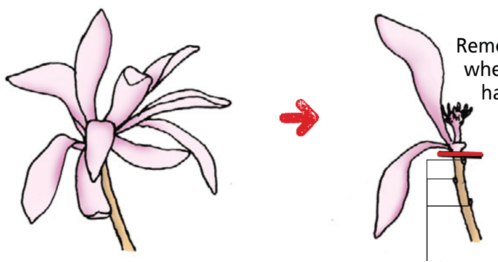


A somewhat long branch

Wire and lay it down.

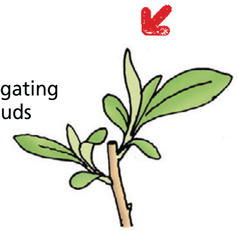
Cut off twig, keeping 2 or so buds.

CURRENT CONDITION



Remove petals when flower has died.

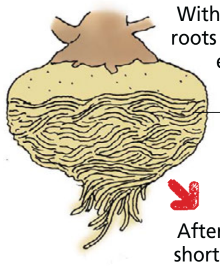
Tiny leaf buds



The elongating leaf buds

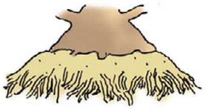
REPLANTING

(March)

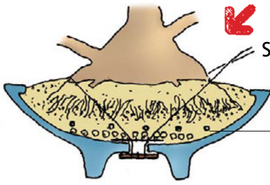


Within a year, thick roots will occupy the entire pot.

Cut here.



After root shortening



Planting guide

Securing wire

Base fertilizer

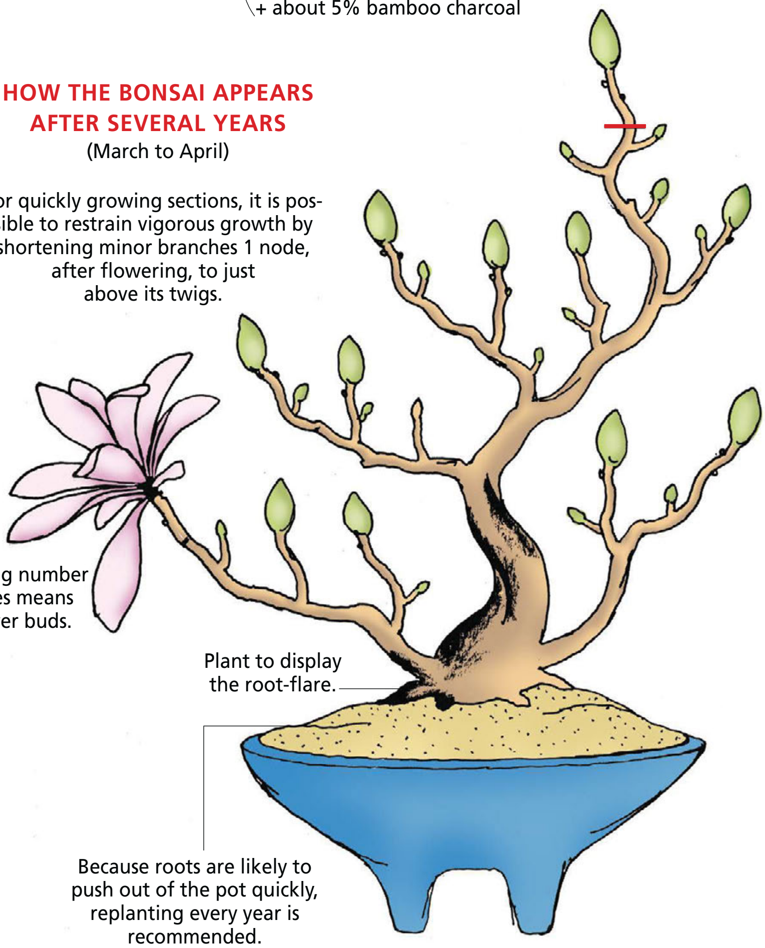
Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

HOW THE BONSAI APPEARS AFTER SEVERAL YEARS

(March to April)

For quickly growing sections, it is possible to restrain vigorous growth by shortening minor branches 1 node, after flowering, to just above its twigs.



An increasing number of branches means more flower buds.

Plant to display the root-flare.

Because roots are likely to push out of the pot quickly, replanting every year is recommended.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Seedling			Cutting • Layering					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Wiring							
Sterilization		Winter				Growth period						Winter
Transplanting			■									
Growth State	Dormancy period			Growth period • Flowering (March–April) • Sprout separating (July–August)						Prime		

Lilac

JAPANESE NAME
Murasakihashidoi

ALTERNATIVE NAMES
Hanahashidoi, Rira

ACADEMIC NAME
Syringa vulgaris

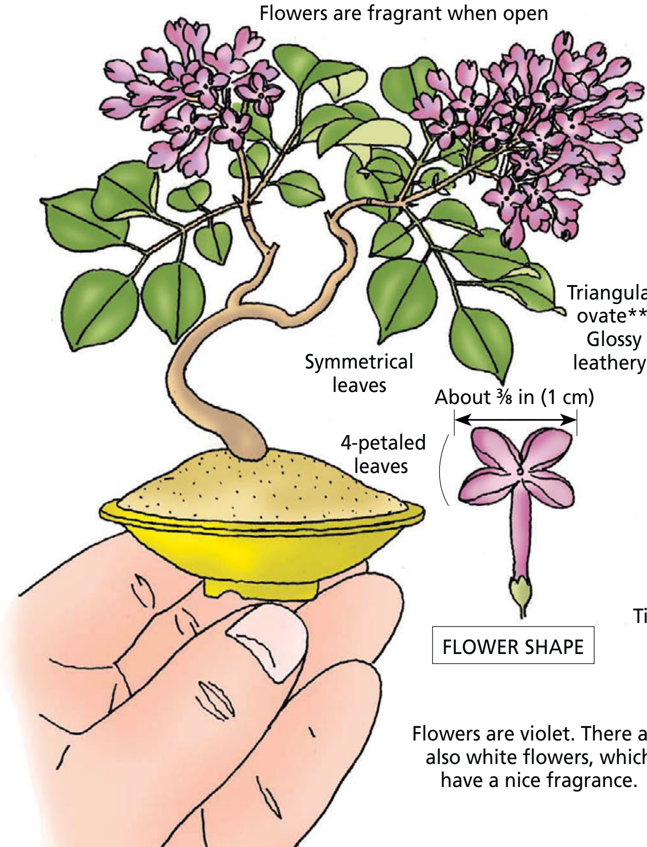
CATEGORY
***Oleaceae* (deciduous hardwood / shrub)**

SYMBOLIC OF
New love

BLOOM
April to May

Spike-shaped flowers of purple and white are attached in large numbers to the tips of branches. Lilacs have a strong fragrance, so they are also used as raw material for perfumes. May flower for long periods due to their high tolerance to cold. Propagating is done with cuttings. Cutting off two to three nodes from shoots during rainy seasons is important to reduce leaf volumes.

PREVIOUS CONDITION



Flowers are fragrant when open

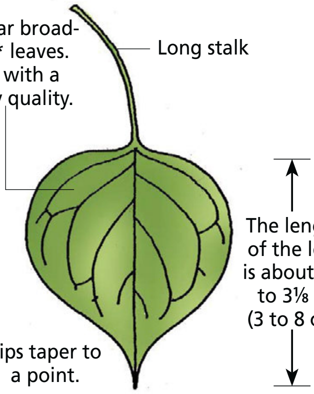
Inflorescences emerge from the leaf axils* of branch tips and bloom.

Symmetrical leaves

About ⅜ in (1 cm)

4-petaled leaves

FLOWER SHAPE



Triangular broad-ovate** leaves. Glossy with a leathery quality.

Long stalk

The length of the leaf is about 1⅛ to 3⅛ in (3 to 8 cm)

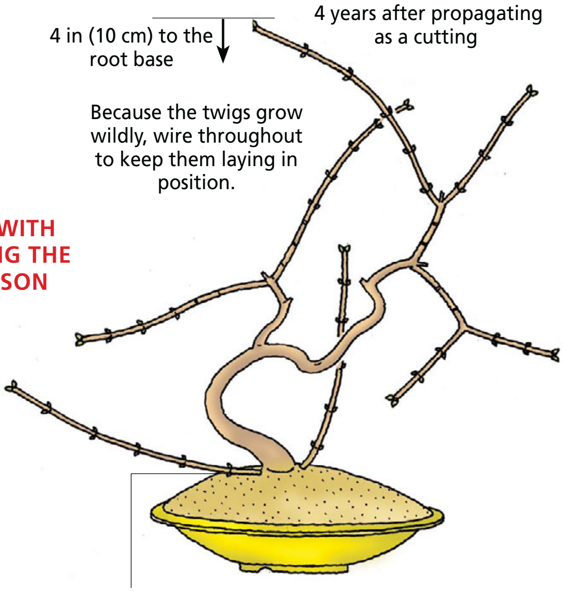
Tips taper to a point.

LEAF SHAPE

Flowers are violet. There are also white flowers, which have a nice fragrance.

CURRENT CONDITION

(March)
4 years after propagating as a cutting



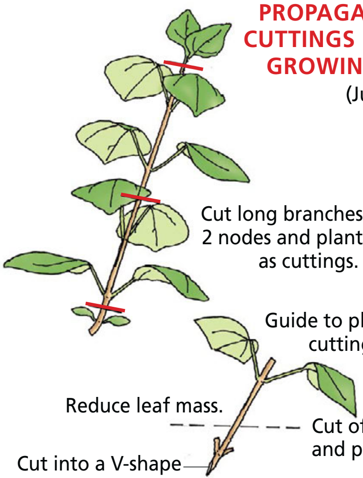
4 in (10 cm) to the root base

Because the twigs grow wildly, wire throughout to keep them laying in position.

Because suckers grow here easily, cut them off from root base if they are not desired.

PROPAGATING WITH CUTTINGS DURING THE GROWING SEASON

(June)



Cut long branches every 2 nodes and plant them as cuttings.

Guide to planting cuttings

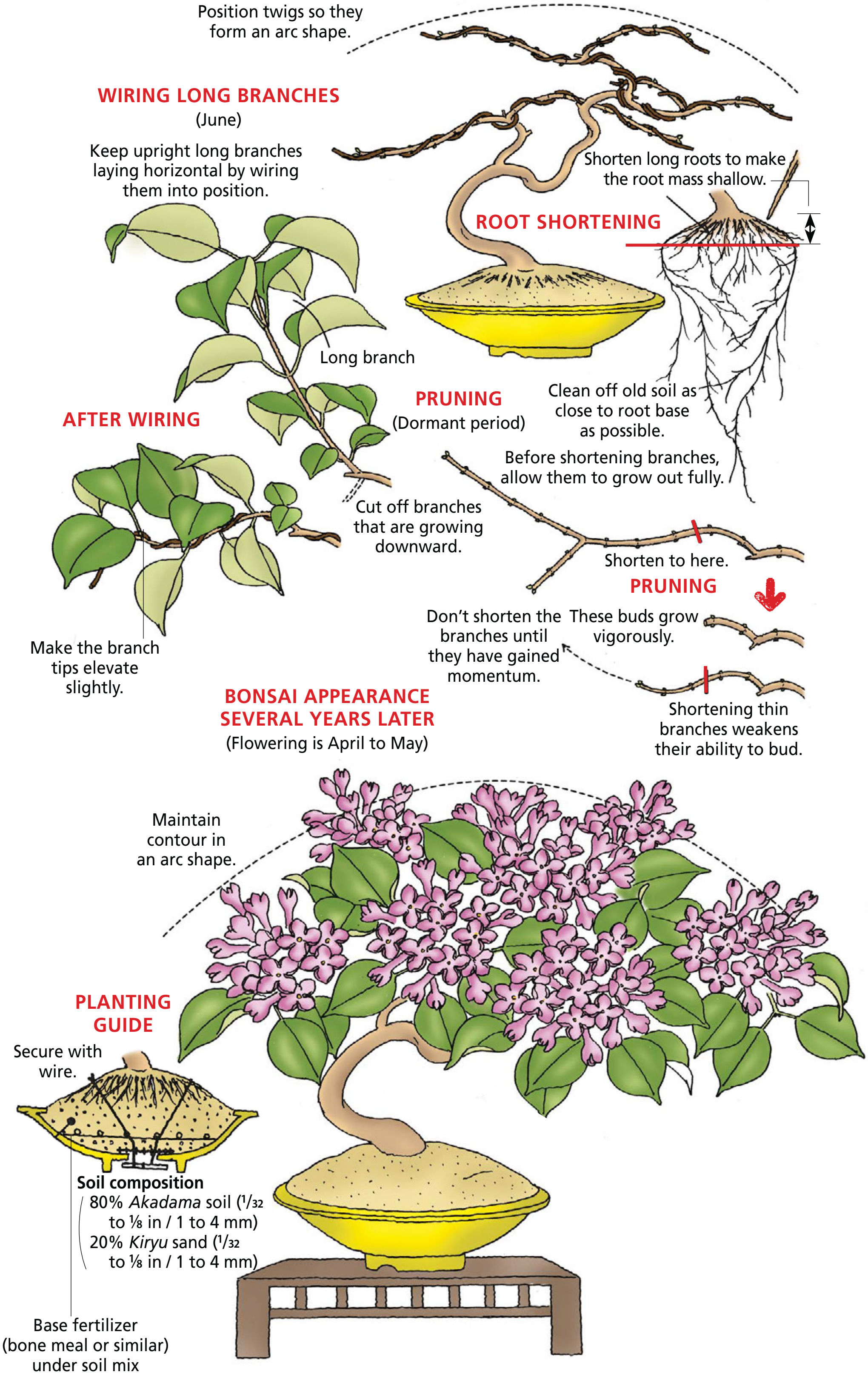
Reduce leaf mass.

Cut off lower leaves and plant this deep.

Cut into a V-shape with a knife.

**Leaf axil: The base area where a leaf stalk is attached to a branch. The part of this junction where leaves grew that is attached to the stalk, with buds that form here being called axillary buds.*

****Triangular broad-ovate: Refer to page 191, "Names of Leaf Parts and How They are Attached."*



AFTER WIRING AND REPLANTING

(June)

Position twigs so they form an arc shape.

WIRING LONG BRANCHES

(June)

Keep upright long branches laying horizontal by wiring them into position.

Long branch

AFTER WIRING

Make the branch tips elevate slightly.

Cut off branches that are growing downward.

ROOT SHORTENING

Shorten long roots to make the root mass shallow.

Clean off old soil as close to root base as possible.

PRUNING

(Dormant period)

Before shortening branches, allow them to grow out fully.

Shorten to here.

PRUNING

These buds grow vigorously.

Don't shorten the branches until they have gained momentum.

Shortening thin branches weakens their ability to bud.

BONSAI APPEARANCE SEVERAL YEARS LATER

(Flowering is April to May)

Maintain contour in an arc shape.

PLANTING GUIDE

Secure with wire.

Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)

20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)

Base fertilizer (bone meal or similar) under soil mix

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting				Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			▨
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping		Pruning			Wiring							
Sterilization		Winter			Growth period							Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (April–May)						Prime		▨

Tosamizuki

JAPANESE NAME
Tosamizuki

ALTERNATIVE NAMES
Shiromura, Koriropushisu

ACADEMIC NAME
Corylopsis spicata

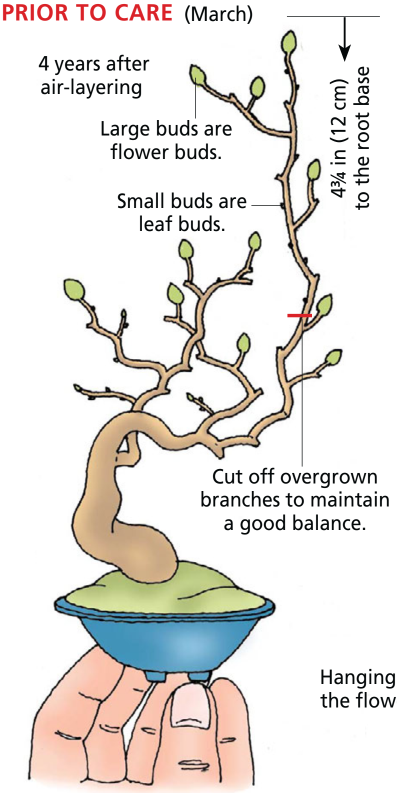
CLASSIFICATION
Hamamelidaceae
(deciduous hardwood / shrub)

SYMBOLIC OF
Tidiness

FLOWERING SEASON
March to April

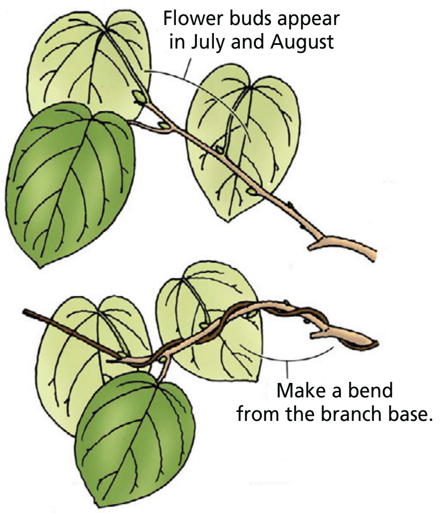
Before its leaves appear, little 5-petal flowers of a pale and somewhat yellowish-green color bloom, hanging like grain ready for harvest. In addition to Tosa (a city in Kochi prefecture), it also grows wild in various mountainous areas of Shikoku. Propagating from seedlings or with cuttings is recommended.

PRIOR TO CARE (March)


4 years after air-layering
Large buds are flower buds.
Small buds are leaf buds.
4¾ in (12 cm) to the root base
Cut off overgrown branches to maintain a good balance.

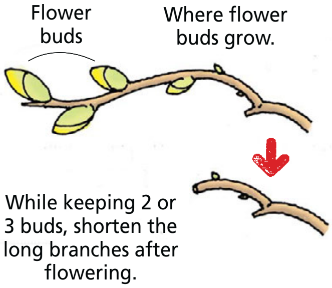
WIRING BRANCHES

(June to July)


Flower buds appear in July and August
Make a bend from the branch base.

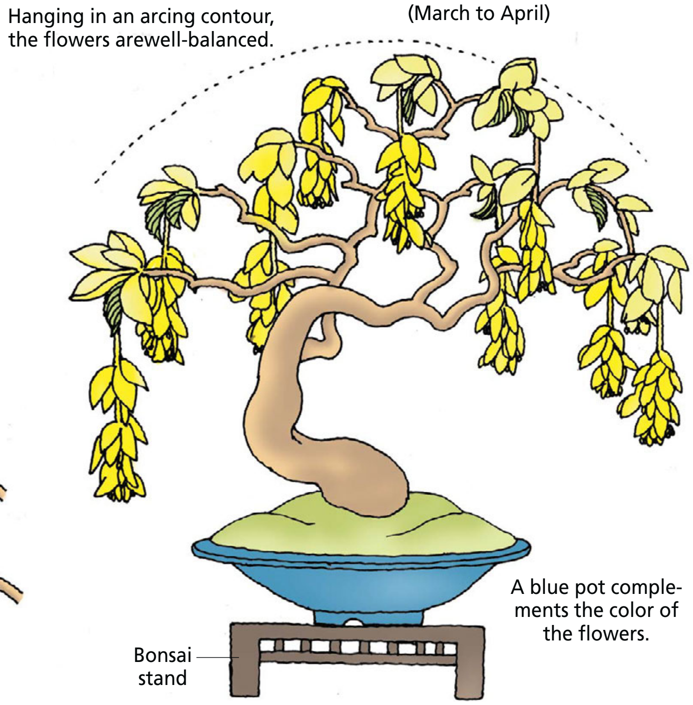
PRUNING

(Dormant period, in February)


Flower buds
Where flower buds grow.
While keeping 2 or 3 buds, shorten the long branches after flowering.

HOW THE BONSAI APPEARS AFTER TWO YEARS

(March to April)

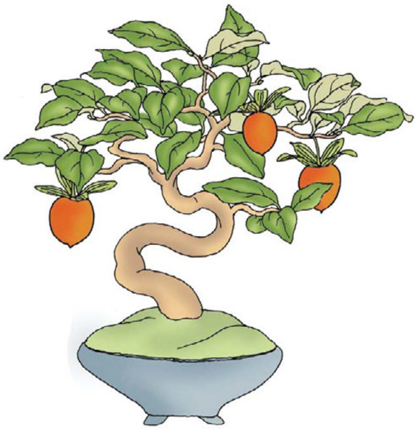

Hanging in an arcing contour, the flowers arewell-balanced.
A blue pot complements the color of the flowers.
Bonsai stand

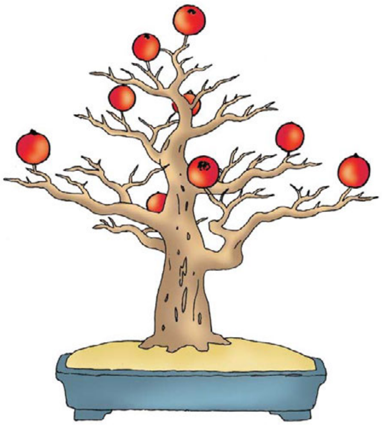
		January	February	March	April	May	June	July	August	September	October	November	December
SCHEDULE	Propagating			Split stock • Cutting			Cutting • Layering						
	Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			▨
	Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
	Protection	Protection room						Shading					▨
	Shaping		Pruning			Pruning	Wiring						
	Sterilization		Winter				Growth stage						Winter
	Transplanting			▨									
	Growth State	Dormancy period			Growth period • Flowering (March–April) • Sprout separating (July–August)						Prime		▨

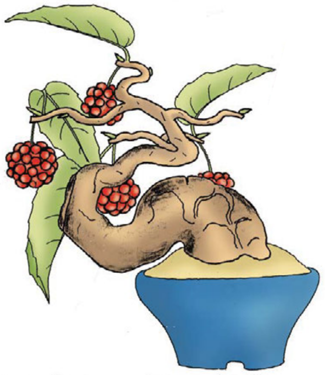
POPULAR BONSAI TREES WITH DELIGHTFULLY RICH FRUIT AND COLORS

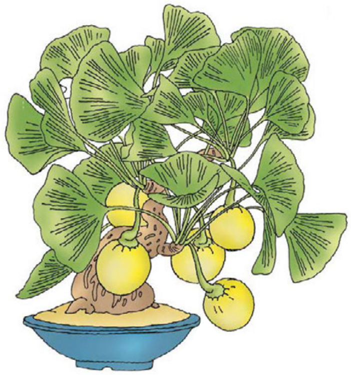
How to Care for Fruiting Bonsai

The highlights of these bonsai trees are their fruit and the aesthetic of the tree. The look of the pot is also an important consideration for displaying the plant. The appearance of the bonsai overall will be valued more than the number or size of their fruit.









FRESH, LOVELY FRUIT ARE SYMBOLIC OF A RICH LIFE

Bonsai that bear abundant fruit primarily from autumn into winter have been designated as “fruiting bonsai.” The fruit and the shape of the tree, the look of the fruit in relation to the pot, and the harmonious appearance of the tree in a tasteful atmosphere are all worthy of note.

To produce future generations, flowers bloom and bear fruit, which birds will nibble on, ultimately facilitating the distribution of seeds. Fruiting bonsai are not only beautiful—they also symbolize abundance, and it is fortunate that we can experience them in our own homes.

Because there are tree species that naturally cross-pollinate between male and female trees, and some tree species that require artificial pollination, it is important to understand which tree species you will be growing.

Relatively speaking, trees with smaller fruit are more suitable for bonsai than those bearing larger fruit.

Cape Jasmine

JAPANESE NAME
Kuchinashi

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Gardenia jasminoides

CLASSIFICATION
Rubiaceae (evergreen broad–leaved tree / shrub)

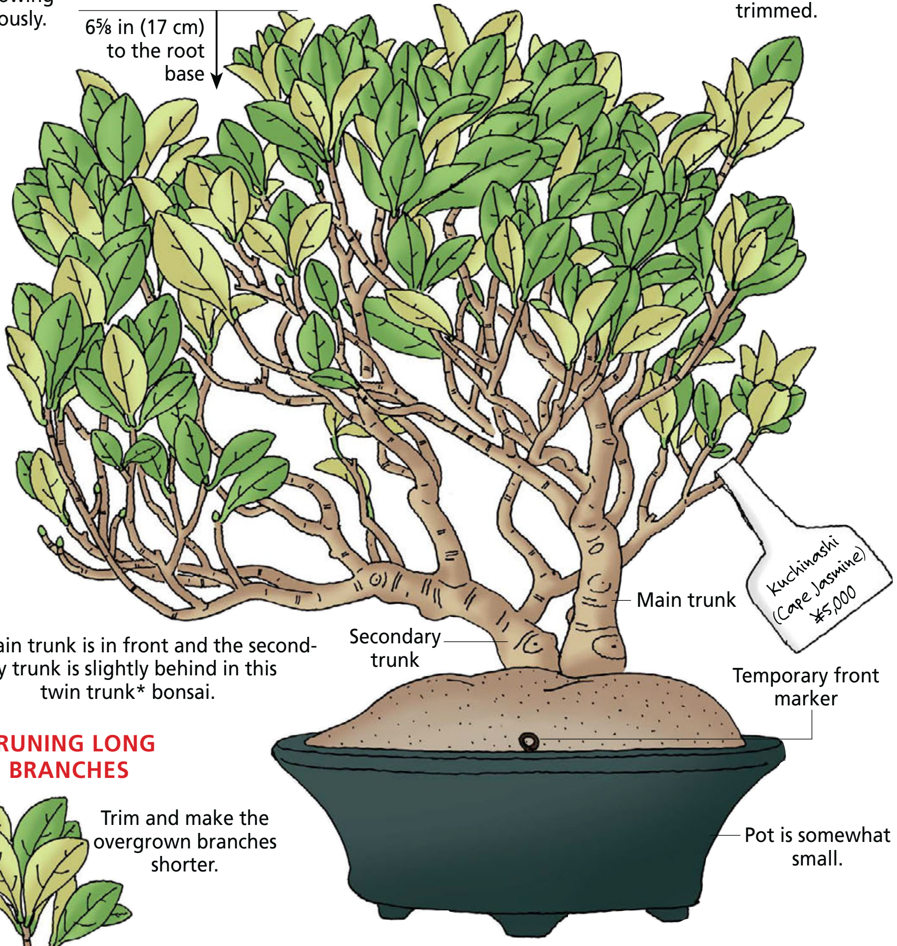
SYMBOLIC OF
Elegance

BEARING FRUIT
November to December

In June and July, white flowers bloom and release a sweet fragrance. The flowers have a velvety texture and soon turn a pale yellow. The leaves are glossy. They were probably named *kuchinashi* ("no mouth") in Japanese due to the way their fruit do not open, even when they are ripe. Their tolerance of the cold is poor, and propagating using cuttings, seed-grown seedlings, or through air-layering is possible.

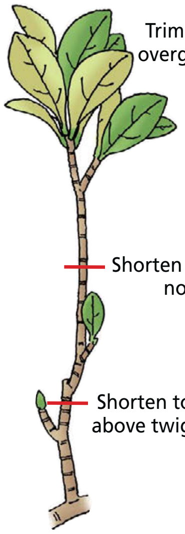
PRIOR TO CARE (April to May)

20 years after being propagated from a cutting or through air-layering

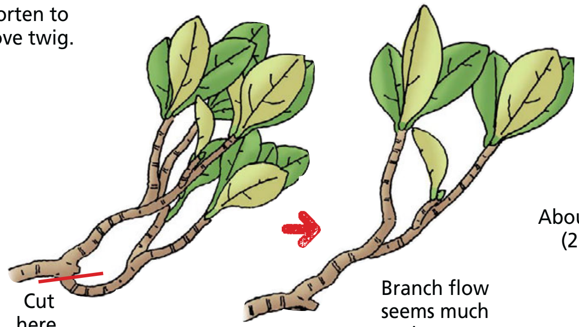

The leaves in the crown are crowded and the branch tips are growing vigorously.
6⅝ in (17 cm) to the root base
We want to make the entire tree smaller and also keep any unnecessary branches trimmed.
Main trunk
Kuchinashi (Cape Jasmine) ¥5,000
Secondary trunk
Temporary front marker
Pot is somewhat small.

The main trunk is in front and the secondary trunk is slightly behind in this twin trunk* bonsai.

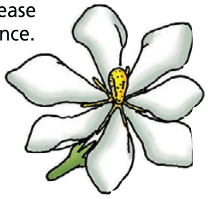
PRUNING LONG BRANCHES


Trim and make the overgrown branches shorter.
Shorten to above node.
Shorten to above twig.

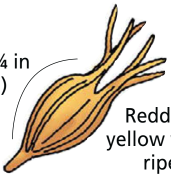
PRUNING DOWNWARD-POINTING BRANCHES


Cut here.
AFTER PRUNING
Branch flow seems much clearer.

FLOWER SHAPE

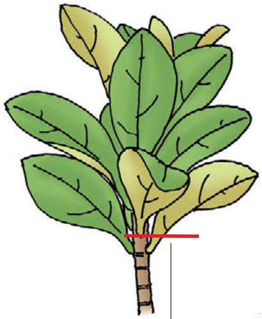

2½ to 3¼ in (6 to 8 cm) white flowers release a pleasant fragrance.

FRUIT SHAPE


About ¾ in (2 cm)
Reddish-yellow when ripe.

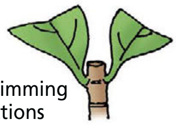
*Twin trunk: Refer to page 12, "Basic Tree Forms."

PRUNING THE TIPS OF BRANCHES



Shorten to here, keeping the 1st set of leaves.

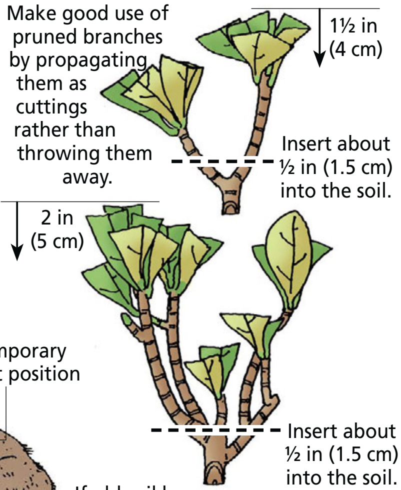
LEAF TRIMMING



Perform leaf trimming on those sections with many leaves and branch tips with vigorous growth.

PROPAGATING WITH CUTTINGS

Make good use of pruned branches by propagating them as cuttings rather than throwing them away.



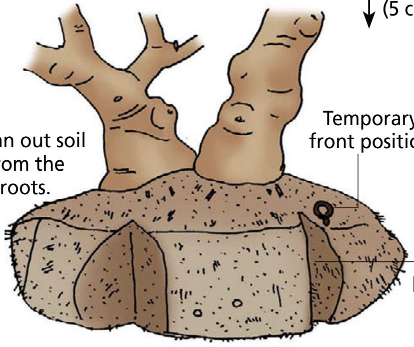
1½ in (4 cm)

Insert about ½ in (1.5 cm) into the soil.

2 in (5 cm)

Insert about ½ in (1.5 cm) into the soil.

ROOT SHORTENING



Clean out soil from the roots.

Temporary front position

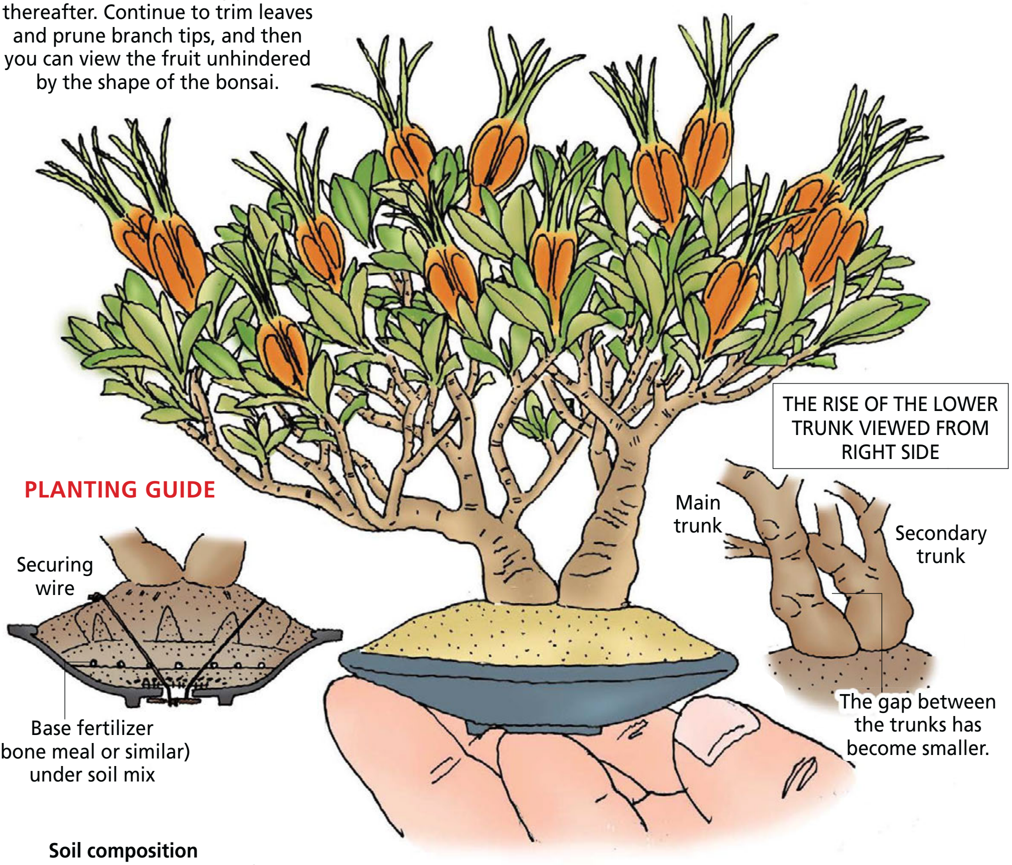
If old soil has hardened, make 5 to 6 V-shaped notches.

If you are going to replant in a shallow pot, cut small wedges from the root mass, and decide which part of the tree will be the front.

VIEWING THE FRUIT OF YOUR BONSAI

(December)

Condition from following year and thereafter. Continue to trim leaves and prune branch tips, and then you can view the fruit unhindered by the shape of the bonsai.



THE RISE OF THE LOWER TRUNK VIEWED FROM RIGHT SIDE

Main trunk

Secondary trunk

The gap between the trunks has become smaller.

PLANTING GUIDE

Securing wire

Base fertilizer (bone meal or similar) under soil mix

Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)

SCHEDULE

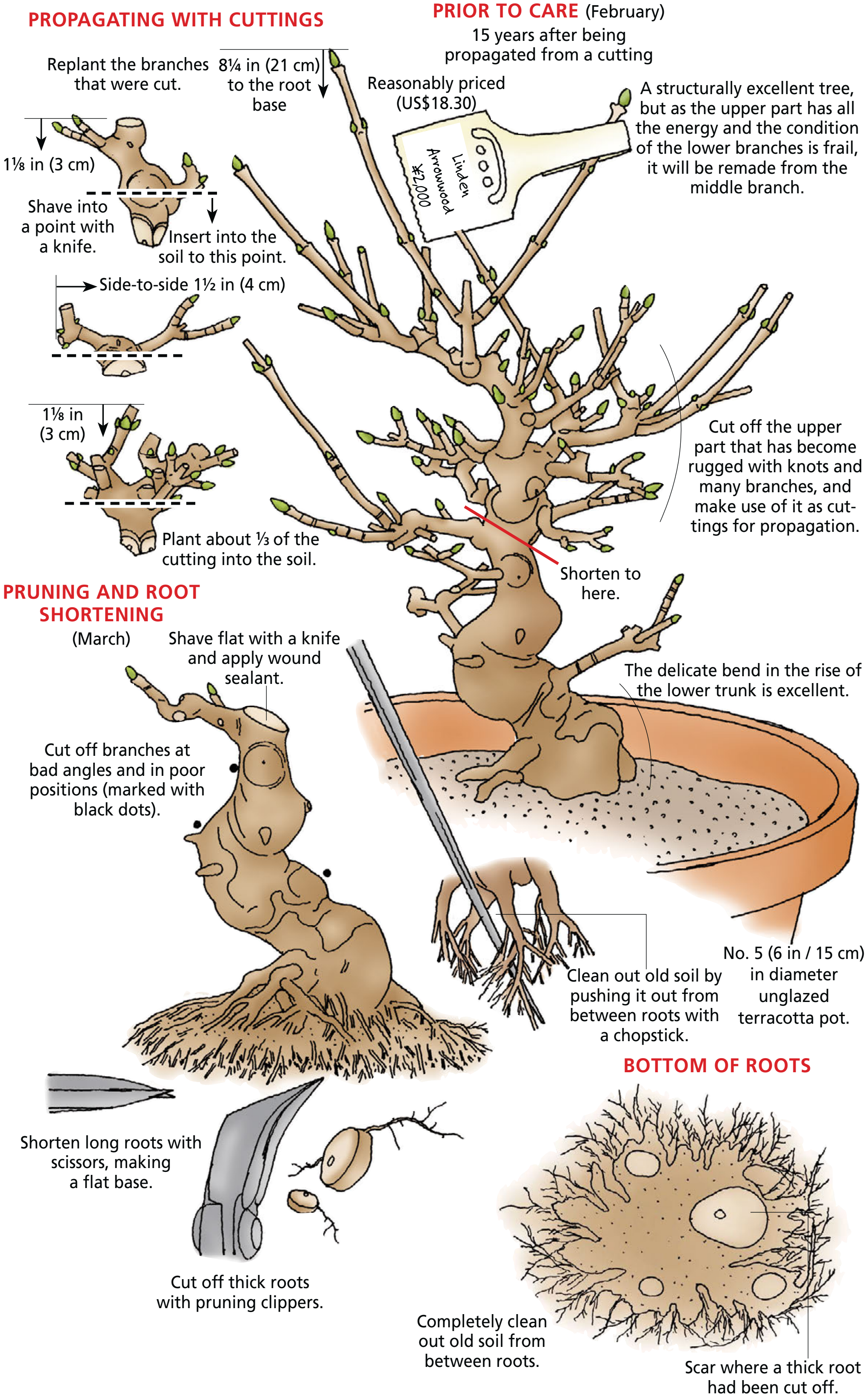
	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March								
April		2–3 times / day					▨	Growth period • Flowering (June–July) • Sprout separating (August–September)
May			Add fertilizer					
June	Cutting				Wiring • Pruning (July)	Growth period		
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (November–December)
November		▨						
December				▨		Winter		

Linden Arrowwood

JAPANESE NAME	*Kyomei, gamazumi*
ALTERNATIVE NAMES	*Linden viburnum*
SCIENTIFIC NAME	*Viburnum dilatatum*
CLASSIFICATION	*Scaffol daceae* **(deciduous broad-leaved tree / shrub)**
SYMBOLIC OF	**Union**
BEARING FRUIT	**October to November**

Flower buds grow on lateral shoots* and the tips of new shoots. The following spring, the buds sprout**, new branches grow and at their tips, the buds flower and bear fruit. Their white flowers bloom through May and June. Most noteworthy is when it bears clusters of ruby-colored fruit. The fruit are flat ovals, with a lustrous appearance.

Propagating with cuttings or through air-layering is recommended.



PROPAGATING WITH CUTTINGS

Replant the branches that were cut.
8¼ in (21 cm) to the root base
1⅛ in (3 cm)
Shave into a point with a knife.
Insert into the soil to this point.
Side-to-side 1½ in (4 cm)
1⅛ in (3 cm)
Plant about ⅓ of the cutting into the soil.

PRIOR TO CARE (February)

15 years after being propagated from a cutting

Reasonably priced (US$18.30)
Linden Arrowwood ¥2,000
A structurally excellent tree, but as the upper part has all the energy and the condition of the lower branches is frail, it will be remade from the middle branch.
Cut off the upper part that has become rugged with knots and many branches, and make use of it as cuttings for propagation.
Shorten to here.
The delicate bend in the rise of the lower trunk is excellent.
Clean out old soil by pushing it out from between roots with a chopstick.
No. 5 (6 in / 15 cm) in diameter unglazed terracotta pot.

PRUNING AND ROOT SHORTENING

(March)

Shave flat with a knife and apply wound sealant.
Cut off branches at bad angles and in poor positions (marked with black dots).
Shorten long roots with scissors, making a flat base.
Cut off thick roots with pruning clippers.

BOTTOM OF ROOTS

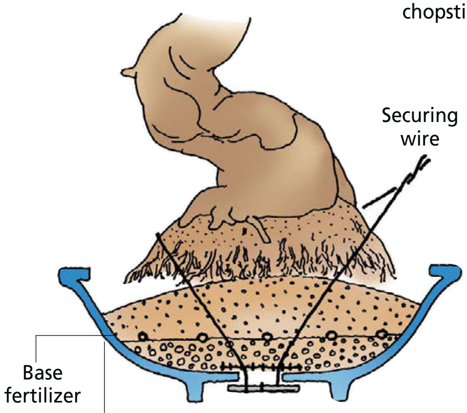
Completely clean out old soil from between roots.
Scar where a thick root had been cut off.

**Lateral shoots: When there is a bud at the base of a leaf ("lateral" meaning "to / at the side"). Also known as an axillary bud. Buds at the tip of a branch are known as apical buds.*

***Sprouting: When newly grown buds first open their leaves. Also known as germination.*

PLANTING GUIDE

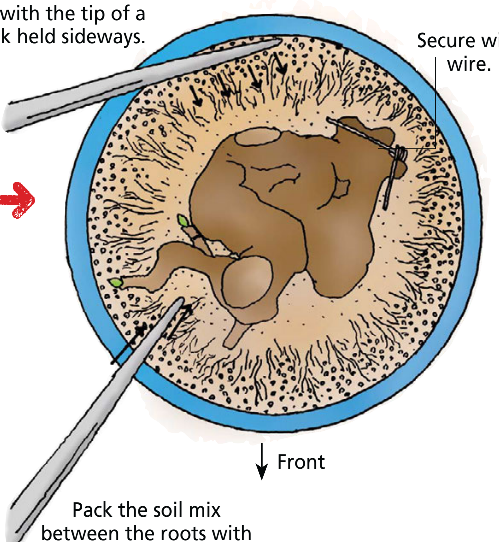
Position tree roots on the mound of soil mix.


Securing wire
Base fertilizer
Bed of gravel (⅛ to ¼ in / 4 to 6 mm)

Soil composition
80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

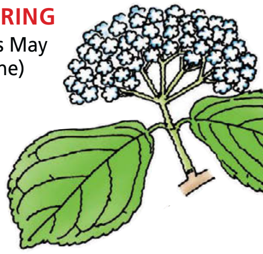
LAYING IN THE SOIL MIX

VIEWED FROM ABOVE


Pack the soil mix into the pot with the tip of a chopstick held sideways.
Secure with wire.
Front
Pack the soil mix between the roots with the tip of a chopstick.

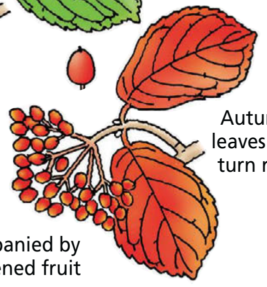
FLOWERING

(Flowers May to June)


White florets cluster and bloom on branch tips.

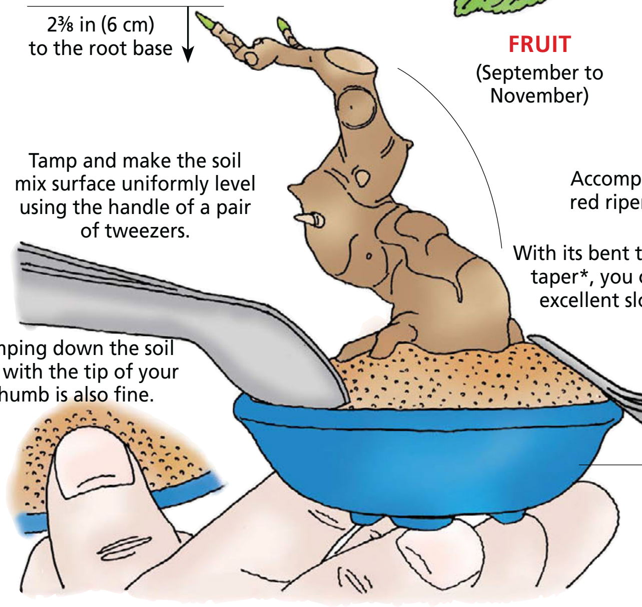
FRUIT

(September to November)


Autumn leaves will turn red.
Accompanied by red ripened fruit

AFTER REPLANTING

(AS VIEWED FROM FRONT)


2⅜ in (6 cm) to the root base
Tamp and make the soil mix surface uniformly level using the handle of a pair of tweezers.
With its bent trunk and good taper*, you can create an excellent sloping trunk.
Another view of the handle of a pair of tweezers.
Tamping down the soil mix with the tip of your thumb is also fine.
No. 3 (3½-in / 9-cm diameter) glazed pot

Taper: A main trunk is said to have "good taper" when it gradually narrows from the base upward. Because a bonsai with good taper gives the impression of a large tree, it is not off-base to say that creating a bonsai with excellent taper is the foundation of bonsai.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling • Cutting						▨	
April		2–3 times / day	Add fertilizer					Growth period • Flowering (June–July) • Sprout separating (July–August)
May						Growth period		
June	Layering • Cutting				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November								
December		▨		▨		Winter		▨

Oriental Bittersweet

JAPANESE NAME
Shiruumemodoki

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Celastrus orbiculatus

CLASSIFICATION
***Euphoridae* (deciduous hardwood / shrub)**

SYMBOLIC OF
Great talent

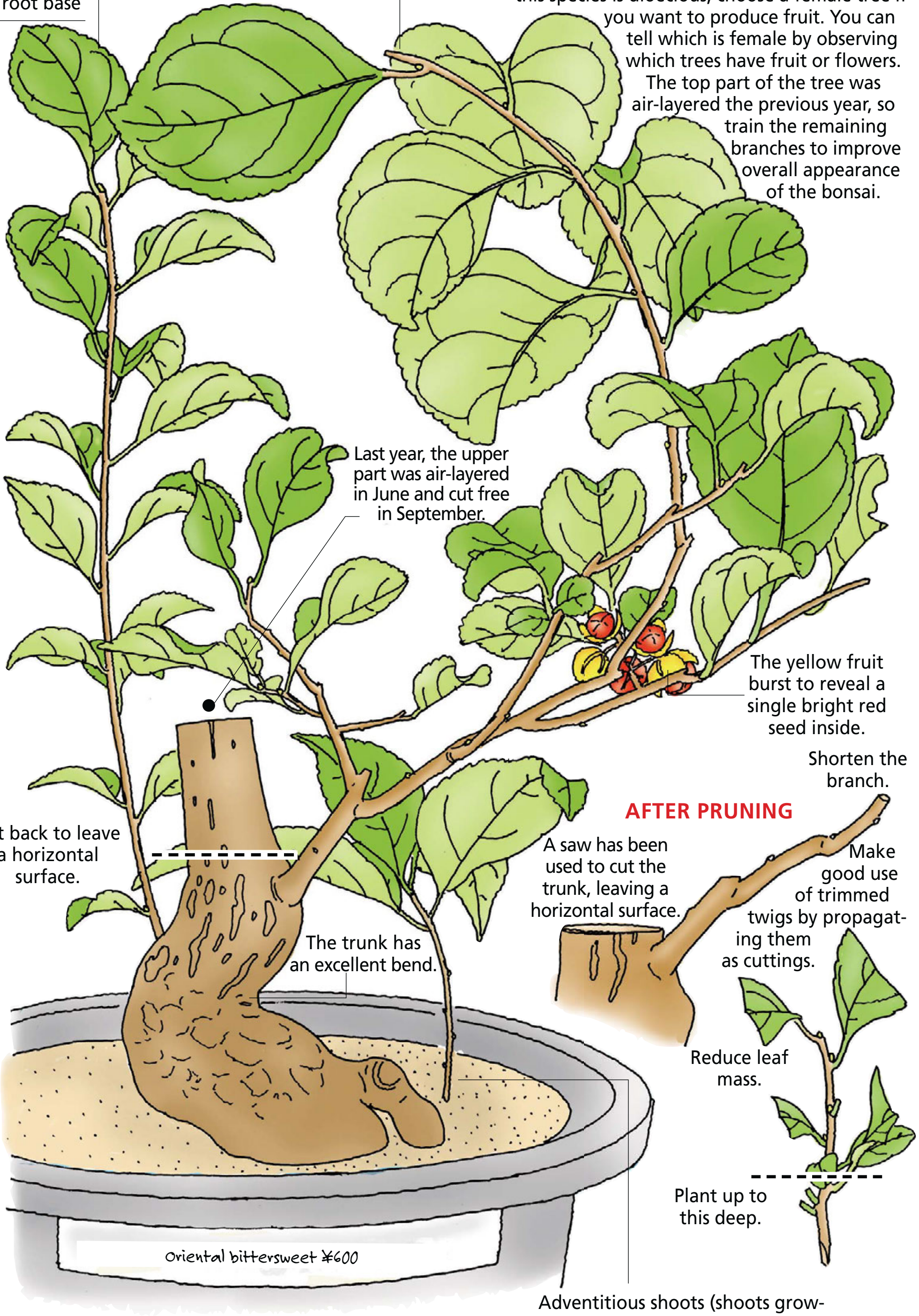
BEARING FRUIT
September to November

In May and June, inconspicuous flowers bloom (during cross-pollination season). From November to December, the yellow fruit split to reveal bright red seeds. Because they reproduce dioeciously, in order to bear fruit, you will need to grow both male and female trees.

This bonsai has a robust ability to root, so propagating by grafting or by planting cuttings are easy methods.

PRIOR TO CARE (October)

5 years after air-layering



Choose a tree that has a thick trunk and branches near the rise of the lower trunk. Cut back the upper part of the tree. Because this species is dioecious, choose a female tree if you want to produce fruit. You can tell which is female by observing which trees have fruit or flowers. The top part of the tree was air-layered the previous year, so train the remaining branches to improve overall appearance of the bonsai.

8 in (20 cm) to the root base

Make good use of pruned twigs by propagating them as cuttings.

Last year, the upper part was air-layered in June and cut free in September.

The yellow fruit burst to reveal a single bright red seed inside.

Cut back to leave a horizontal surface.

The trunk has an excellent bend.

Adventitious shoots (shoots growing from roots) can be planted. They can also be developed as new roots.*

AFTER PRUNING

Shorten the branch.

A saw has been used to cut the trunk, leaving a horizontal surface.

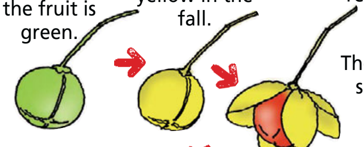
Make good use of trimmed twigs by propagating them as cuttings.

Reduce leaf mass.

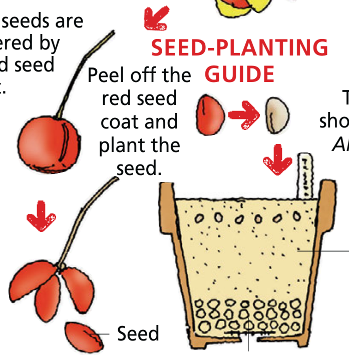
Plant up to this deep.

**To develop adventitious shoots as new roots, refer to page 18.*

CHANGES IN THE FRUIT

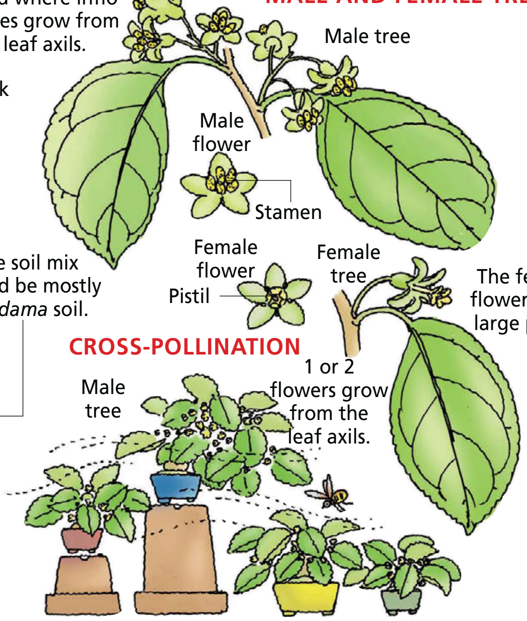

At first, the fruit is green.
The fruit turns yellow in the fall.
The husk splits.

SEED-PLANTING GUIDE


The seeds are covered by a red seed coat.
Peel off the red seed coat and plant the seed.
The soil mix should be mostly *Akadama* soil.
Seed
The soft temporary seed coat splits.
Gravel

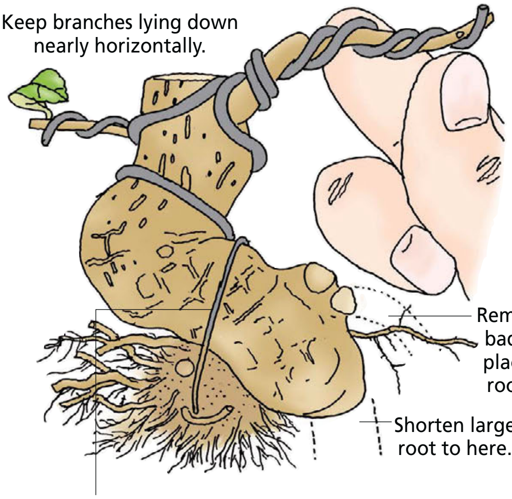
GUIDE TO DISTINGUISHING MALE AND FEMALE TREES

CROSS-POLLINATION

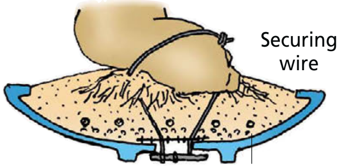

Several flowers are attached where inflorescences grow from the leaf axils.
Male tree
Male flower
Stamen
Female flower
Pistil
Female tree
The female flowers have large pistils.
1 or 2 flowers grow from the leaf axils.
Male tree

During flowering season, if a male tree is placed near the female tree, they will cross-pollinate naturally.

AFTER ROOT SHORTENING


Keep branches lying down nearly horizontally.
Remove badly-placed roots.
Shorten large root to here.
Bind up dangling roots with wire.

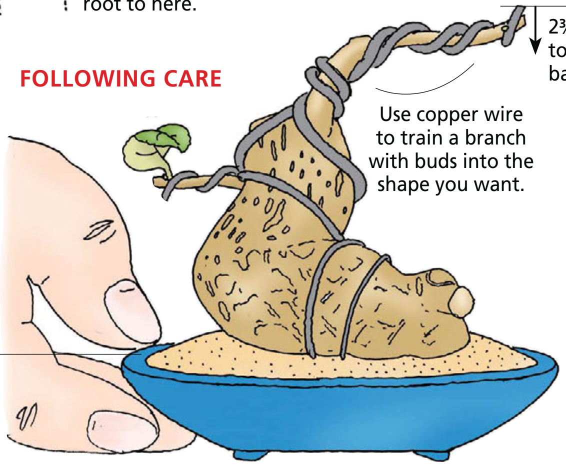
PLANTING GUIDE


Securing wire
Base fertilizer

Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

FOLLOWING CARE


2¾ in (7 cm) to the root base
Use copper wire to train a branch with buds into the shape you want.
Its yellow fruit and red seeds look attractive in a blue glazed pot.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling •Roots insertion • Cutting						🟦	
April		2–3 times / day	Add fertilizer					Growth period • Flowering (May–June)
May						Growth period		
June	Layering • Cutting				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November								
December						Winter		

Crabapple

JAPANESE NAME
Himeringo

ALTERNATIVE NAMES
n/a

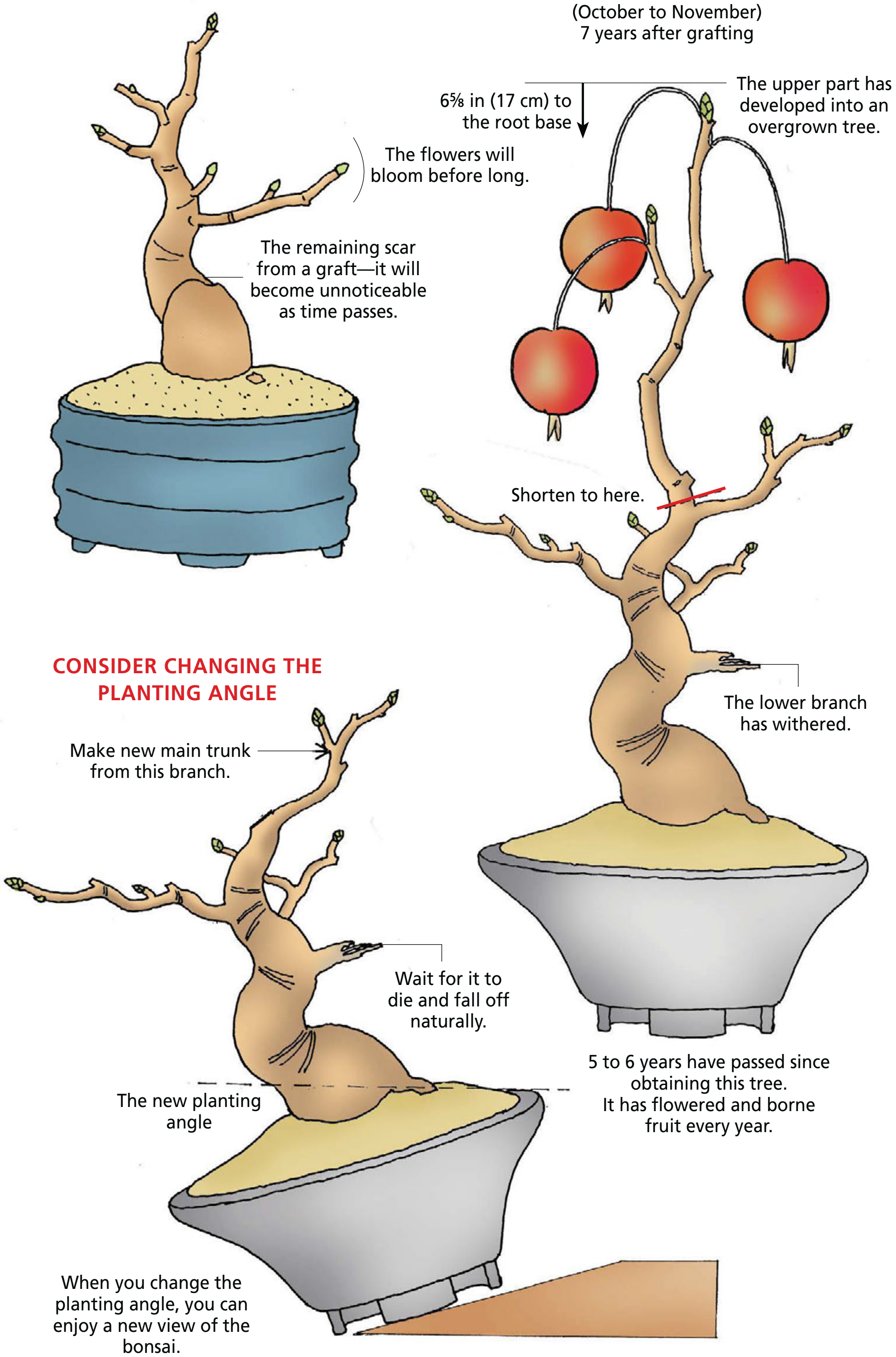
SCIENTIFIC NAME
Malus prunifolia

CLASSIFICATION
***Rosaceae* (deciduous broadleaf tree / macrophanerophyte)**

SYMBOLIC OF
Temptation

BEARING FRUIT
October to November

With white flowers blooming in spring, and ¾ to 1⅛-in (2 to 3-cm) fruit ripening and slowly turning a deep red in autumn, this bonsai can be viewed for a long period of time. Because it is dioecious*, furnish bonsai with pollen from another crabapple tree or another apple variety during flowering season to enable it to bear fruit. Grafting or seed-grown seedlings are recommended for propagation.



CONDITION WHEN THE BONSAI WAS FIRST ACQUIRED

(April)
4 to 5 years after grafting

The flowers will bloom before long.

The remaining scar from a graft—it will become unnoticeable as time passes.

PRESENT CONDITION

(October to November)
7 years after grafting

6⅝ in (17 cm) to the root base

The upper part has developed into an overgrown tree.

Shorten to here.

The lower branch has withered.

5 to 6 years have passed since obtaining this tree.
It has flowered and borne fruit every year.

CONSIDER CHANGING THE PLANTING ANGLE

Make new main trunk from this branch.

Wait for it to die and fall off naturally.

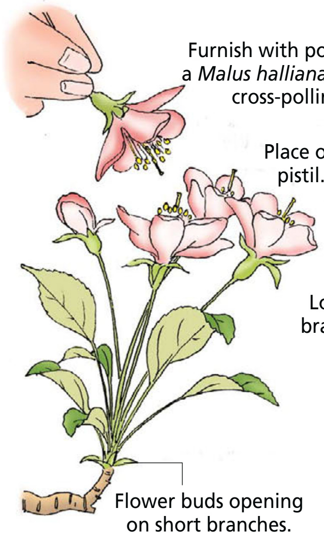
The new planting angle

When you change the planting angle, you can enjoy a new view of the bonsai.

Dioecious: When a tree cannot bear fruit through self-pollination. Even if self-pollination occurs, it does not result in fertilization, and successfully bearing fruit is difficult. Fertilization with the pollen from another tree or a different variety of tree is required.

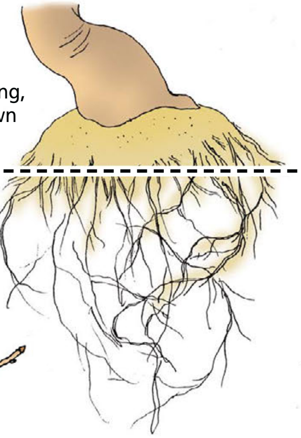
CROSS-POLLINATING

(April to May)


Furnish with pollen from a *Malus halliana* flower to cross-pollinate.
Place on pistil.
Flower buds opening on short branches.

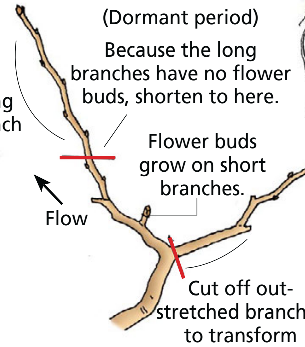
ROOT SHORTENING

(Autumn or spring)

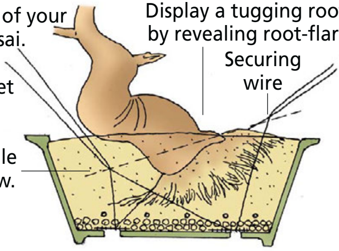

Shorten long, over-grown roots.

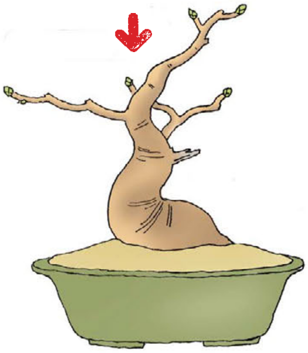
PRUNING

(Dormant period)


Because the long branches have no flower buds, shorten to here.
Long branch
Flower buds grow on short branches.
Flow
Cut off out-stretched branches to transform the flow of your bonsai.

PLANTING GUIDE

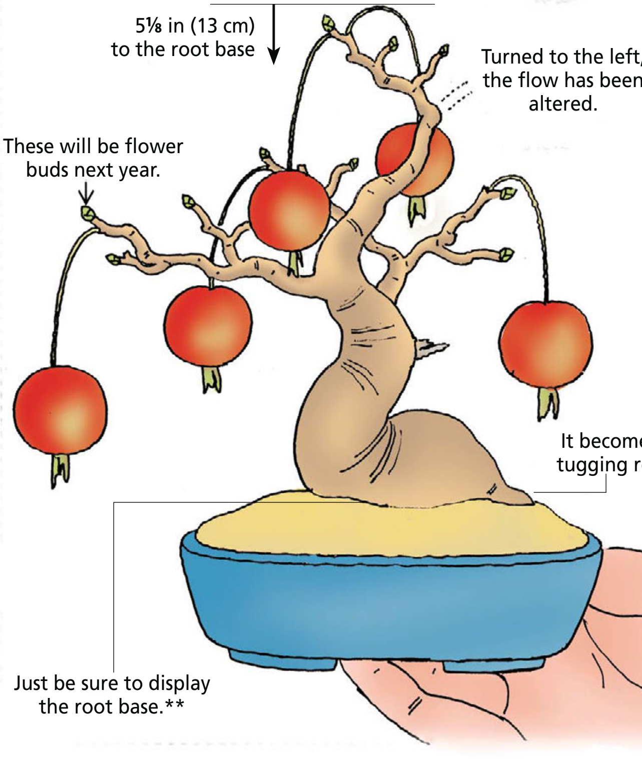

Display a tugging root* by revealing root-flare.
Securing wire
Plant the tree set on its side.
Planing angle up until now.



AFTER PLANTING

It has a solid rise of the lower trunk and its display of stability has improved.

HOW THE BONSAI APPEARS AFTER SEVERAL YEARS


5⅛ in (13 cm) to the root base
Turned to the left, the flow has been altered.
These will be flower buds next year.
It becomes a tugging root.
Just be sure to display the root base.**

Tugging root: Root-flare that appears to slope away from the main trunk. Having root-flare to support a powerful trunk is excellent.

***Root base: One type of presentation of the surface-visible roots of trees. The situation where roots that have formed as one root mass, or are about to form into one root mass.*

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Grafting				Pruning	Winter		
March	Seedling							
April		2–3 times / day	Add fertilizer			Growth period		Growth period • Flowering (April–May) • Sprout separating (July–August)
May								
June	Layering				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruits form (October–November)
November	Seedling							
December						Winter		

Hamilton's Spindle-tree

JAPANESE NAME
Mayumi

ALTERNATIVE NAME
Himalayan spindle

SCIENTIFIC NAME
Euonymus hamiltonianus

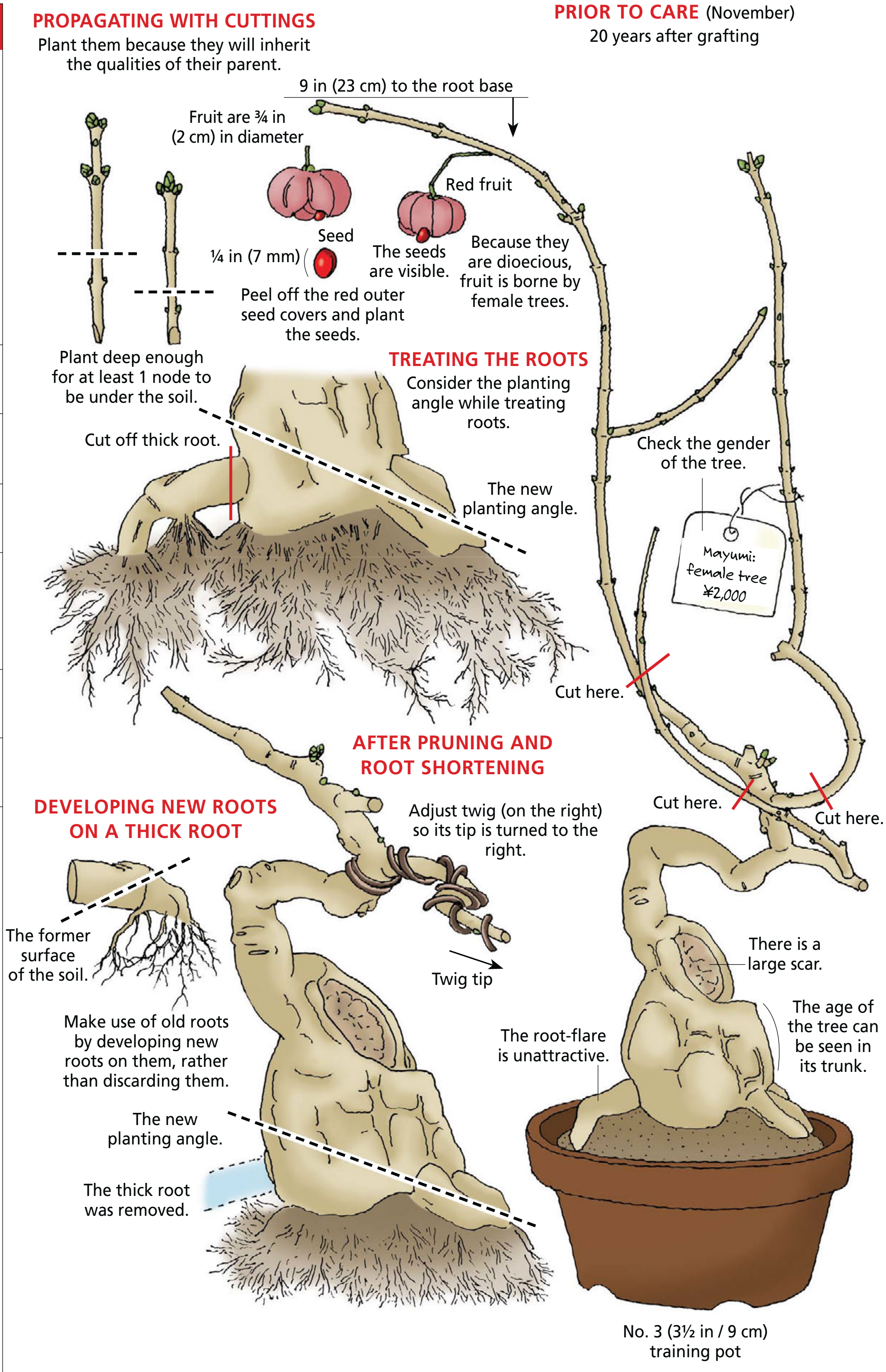
CLASSIFICATION
***Celastraceae* family (deciduous broadleaf tree / macrophanerophyte)**

SYMBOLIC OF
Charm

BEARING FRUIT
October to November

The origin of the Japanese name refers to the way that this tree was once used to construct bows for archers. Blooming through April and May, this tree bears fruit in the autumn, which ripen to a pale crimson color and split into four quadrants, allowing red seeds to peek out.

Being dioecious, a male tree is required for cross-pollination. As this is a robust variety, propagating with cuttings is recommended.



PROPAGATING WITH CUTTINGS

Plant them because they will inherit the qualities of their parent.

Fruit are ¾ in (2 cm) in diameter
Seed
¼ in (7 mm)
Peel off the red outer seed covers and plant the seeds.
Red fruit
The seeds are visible.
Because they are dioecious, fruit is borne by female trees.
Plant deep enough for at least 1 node to be under the soil.

PRIOR TO CARE (November)

20 years after grafting

9 in (23 cm) to the root base
Check the gender of the tree.
Mayumi: female tree ¥2,000
Cut here.
Cut here.
Cut here.
There is a large scar.
The age of the tree can be seen in its trunk.
The root-flare is unattractive.
No. 3 (3½ in / 9 cm) training pot

TREATING THE ROOTS

Consider the planting angle while treating roots.

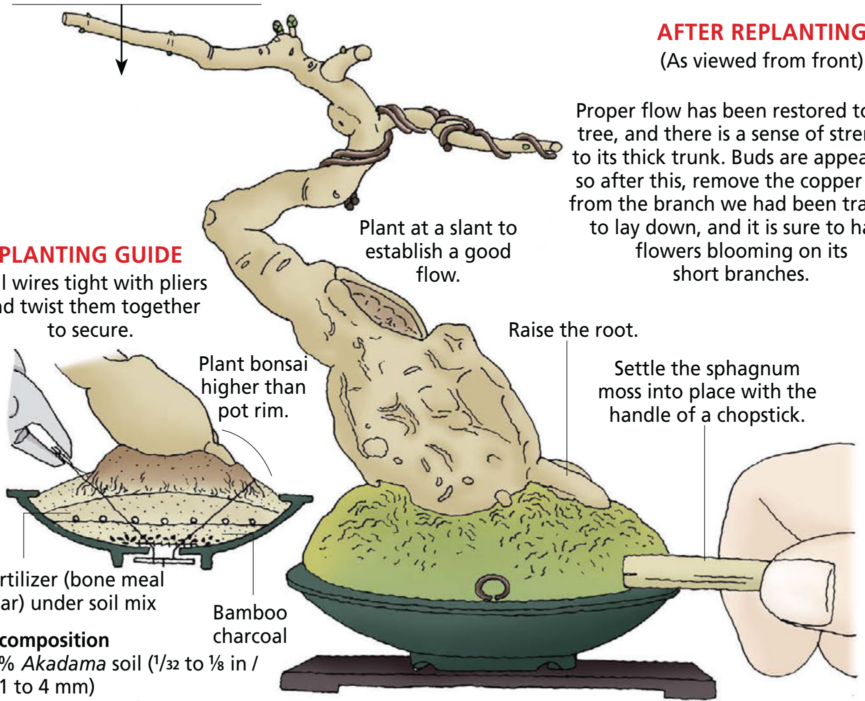
Cut off thick root.
The new planting angle.

AFTER PRUNING AND ROOT SHORTENING

Adjust twig (on the right) so its tip is turned to the right.
Twig tip

DEVELOPING NEW ROOTS ON A THICK ROOT

The former surface of the soil.
Make use of old roots by developing new roots on them, rather than discarding them.
The new planting angle.
The thick root was removed.


4 in (10 cm) to the root base

PLANTING GUIDE

Pull wires tight with pliers and twist them together to secure.

Plant bonsai higher than pot rim.
Base fertilizer (bone meal or similar) under soil mix
Bamboo charcoal
Plant at a slant to establish a good flow.
Raise the root.
Settle the sphagnum moss into place with the handle of a chopstick.

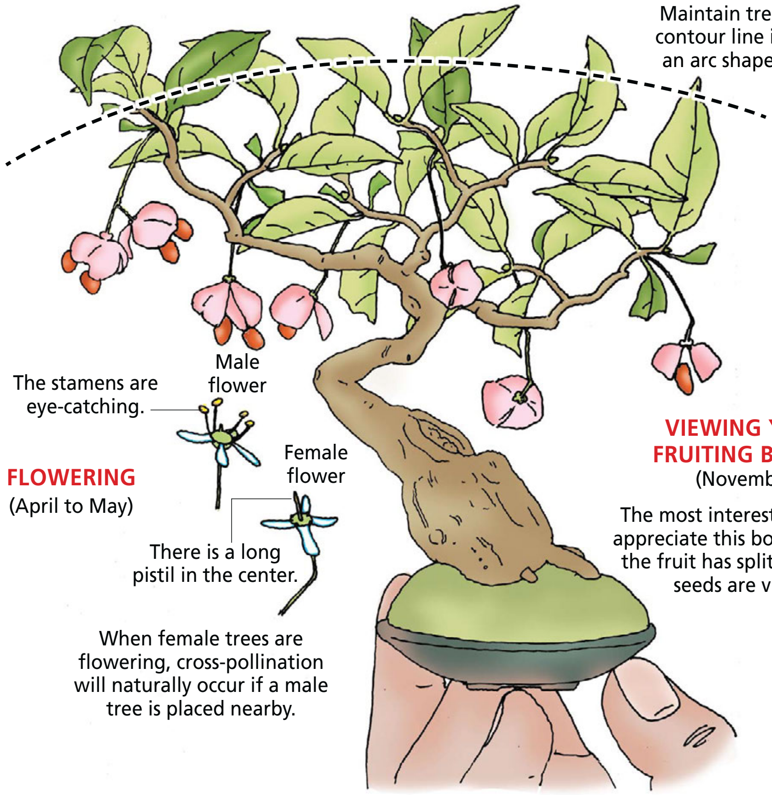
Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)

AFTER REPLANTING

(As viewed from front)

Proper flow has been restored to the tree, and there is a sense of strength to its thick trunk. Buds are appearing, so after this, remove the copper wire from the branch we had been training to lay down, and it is sure to have flowers blooming on its short branches.


Maintain tree contour line in an arc shape.
The stamens are eye-catching.
Male flower
Female flower
There is a long pistil in the center.

FLOWERING

(April to May)

When female trees are flowering, cross-pollination will naturally occur if a male tree is placed nearby.

VIEWING YOUR FRUITING BONSAI

(November)

The most interesting time to appreciate this bonsai is when the fruit has split and its red seeds are visible.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Cutting				Pruning	Winter		
March	Seedling						■	
April		2–3 times / day	Add fertilizer					Growth period • Flowering (April–May) • Sprout separating (July–August)
May						Growth period		
June	Layering • Cutting				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruits form (October–November)
November								
December		1–2 times / week		Protection room		Winter		Dormancy period

Diamond Leaf Persimmon

JAPANESE NAME
Miyakobeni

ALTERNATIVE NAME
Red-fruited Chinese persimmon

SCIENTIFIC NAME
Diospyros rhombifolia

CLASSIFICATION
Persimmon (deciduous broadleaf tree / shrub)

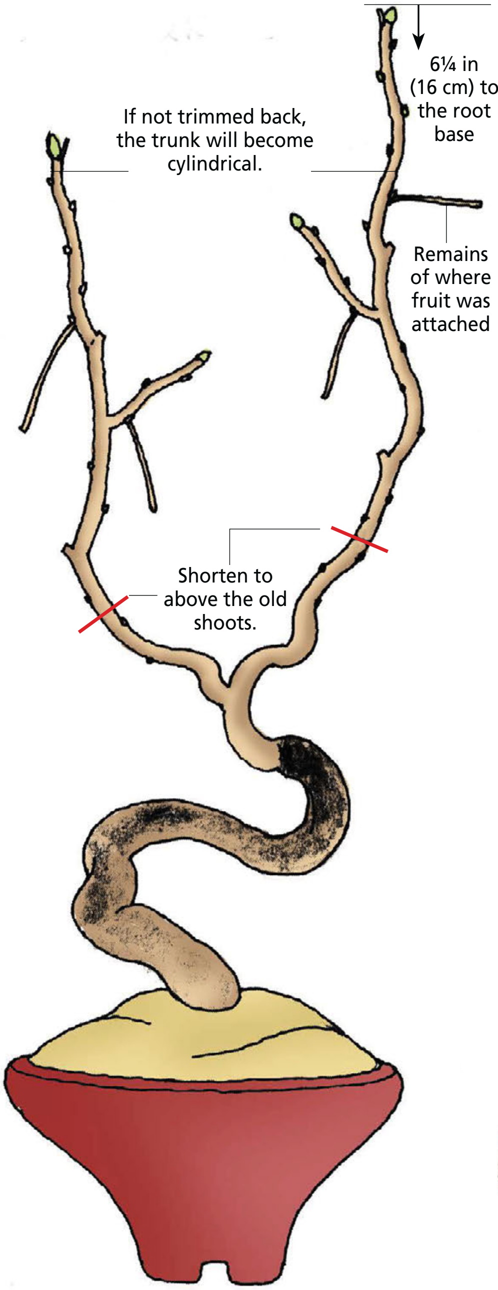
SYMBOLIC OF
Longevity

BEARING FRUIT
October to November

Just five to six years after developing from seedlings, flowers will bloom in April and May. There is a charm in the color and varying shapes of its fruit and its green leaves. As the fruit remain even after the leaves have fallen, viewing can continue for a long time. Because it is dioecious, a male tree is needed for cross-pollination. Propagating with cuttings or laying root cuttings down to develop new roots is recommended.

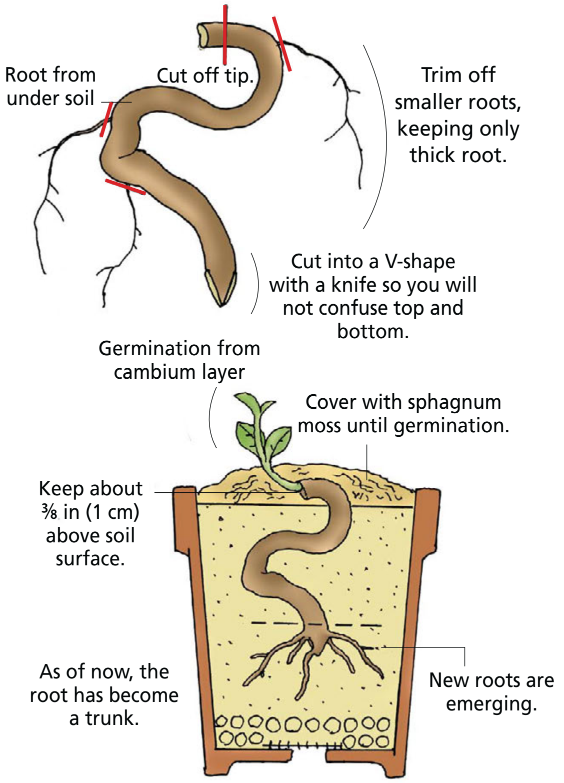
PRIOR TO CARE (March)

3 years after developing new roots


6¼ in (16 cm) to the root base
If not trimmed back, the trunk will become cylindrical.
Remains of where fruit was attached
Shorten to above the old shoots.

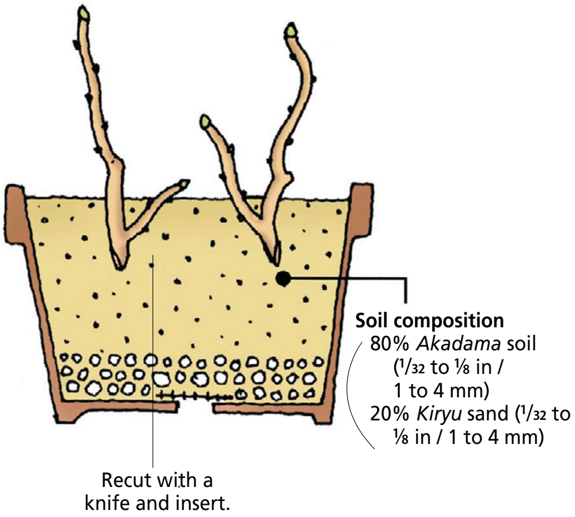
DEVELOPING NEW ROOTS (March)

Use the unneeded roots from replanting.


Root from under soil
Cut off tip.
Trim off smaller roots, keeping only thick root.
Cut into a V-shape with a knife so you will not confuse top and bottom.
Germination from cambium layer
Cover with sphagnum moss until germination.
Keep about ⅜ in (1 cm) above soil surface.
As of now, the root has become a trunk.
New roots are emerging.

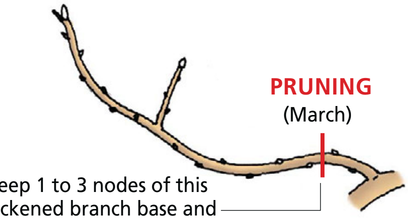
PROPAGATING WITH CUTTINGS

Replant the cut branches.


Soil composition
80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
Recut with a knife and insert.

PRUNING

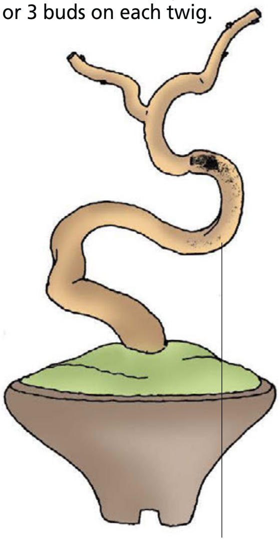
(March)



Keep 1 to 3 nodes of this thickened branch base and cut off the rest.

AFTER PRUNING

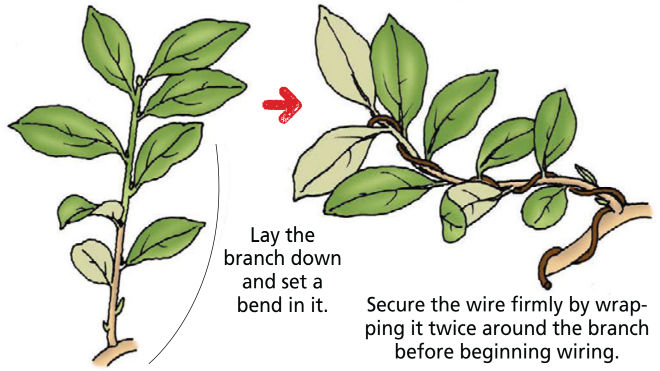
Cut here, keeping 2 or 3 buds on each twig.



If a dark trunk surface is unappealing, clean it off with a scrubbing brush and water.

BRANCH SHAPING

(June)



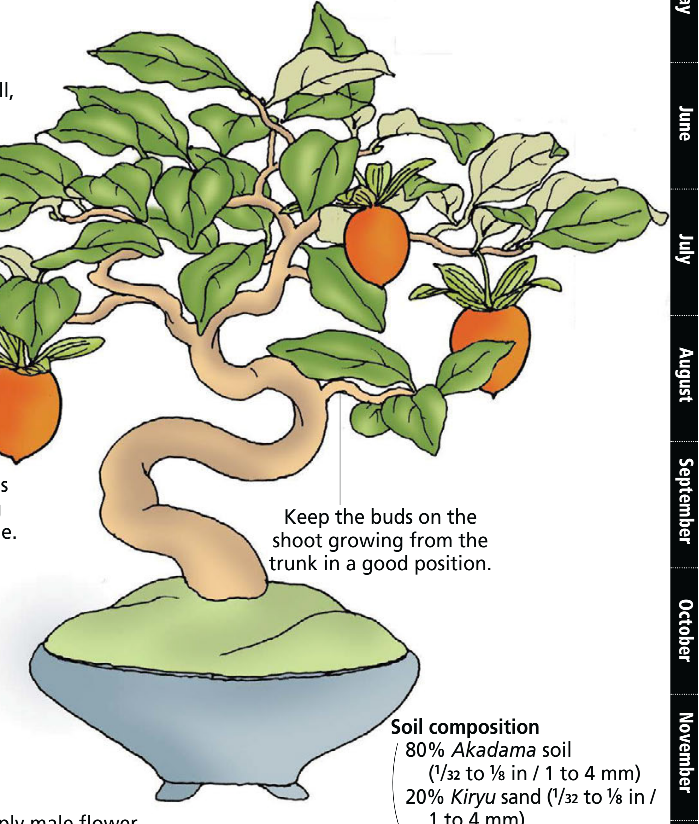
Lay the branch down and set a bend in it.

Secure the wire firmly by wrapping it twice around the branch before beginning wiring.

For new shoots, growing upright and straight comes naturally.

HOW BONSAI APPEARS AFTER SEVERAL YEARS

Do not allow the tree to become tall—lay down the branches to the left and right, and front and back.



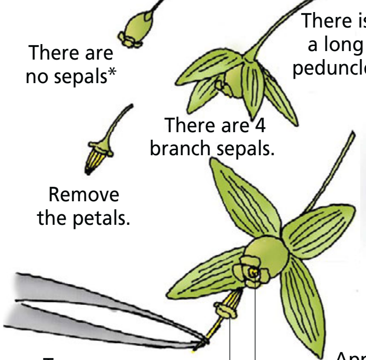
Keep the buds on the shoot growing from the trunk in a good position.

REPLANTING

Because its roots grow well, replant every year.

FLOWERING AND CROSS-POLLINATION

(April)



Male Flower

Female flower

There are no sepals*

There is a long peduncle.

There are 4 branch sepals.

Remove the petals.

Tweezers

Male Flower

Apply male flower while the pistil is still yellow.

Soil composition

80% *Akadama* soil ($^1/_{32}$ to ⅛ in / 1 to 4 mm)

20% *Kiryu* sand ($^1/_{32}$ to ⅛ in / 1 to 4 mm)

Mix about 10% bamboo charcoal with the soil mix.

**Sepal: The separate parts of the calyx are the sepals. Calyx is a botanical term meaning the exterior parts of the corolla (either individual flower petals or a set of petals).*

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling • Roots insertion • Cutting						▨	
April		2–3 times / day						Growth period • Flowering (April–May)
May					Wiring			
June	Layering • Cutting		Add fertilizer			Growth period		
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November								
December		▨		▨		Winter		▨

Thorny Olive

JAPANESE NAME
Nawashirogumi

ALTERNATIVE NAME
Oleaster

SCIENTIFIC NAME
Elaeagnus pungens

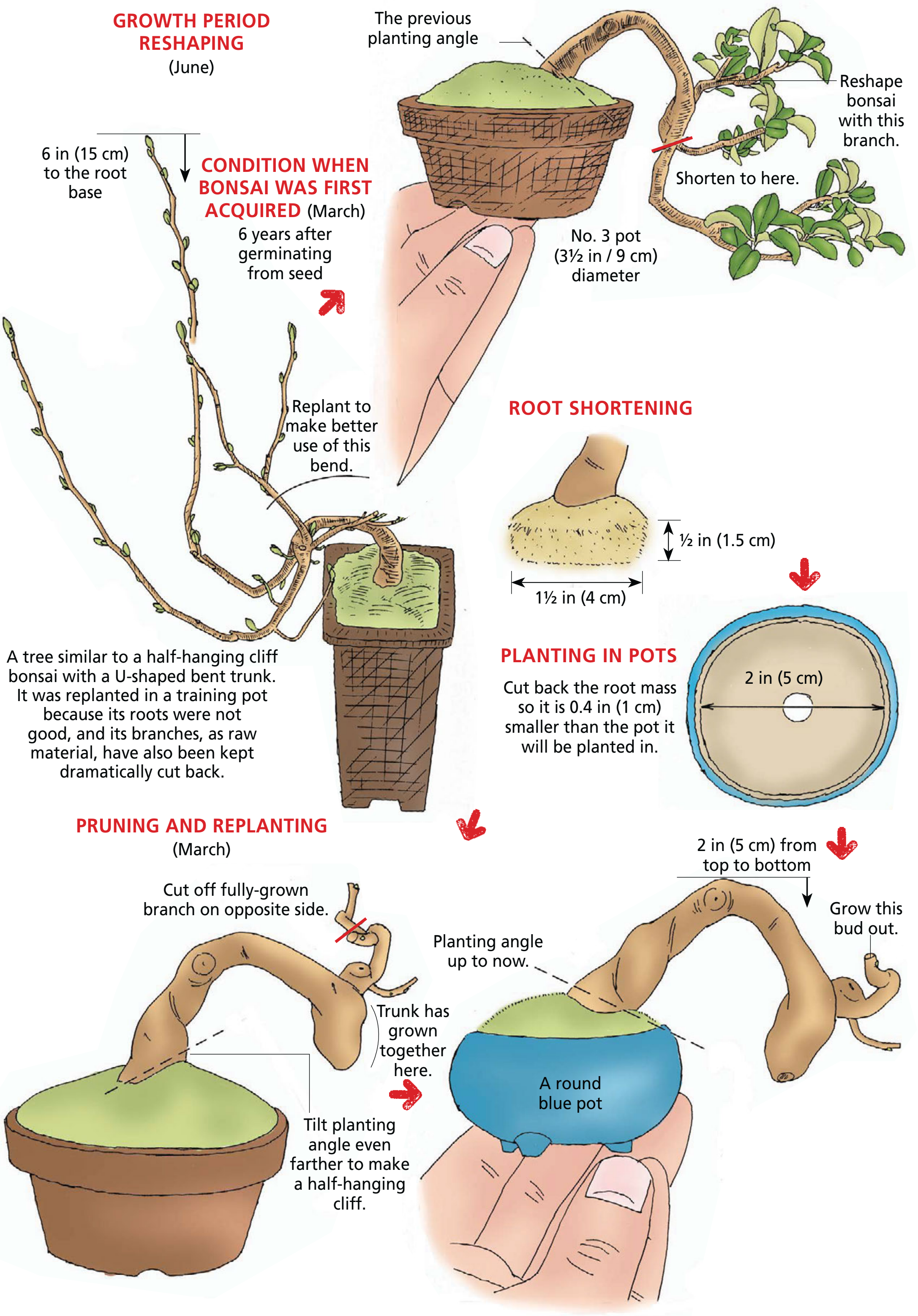
CLASSIFICATION
Elaeagnaceae **(evergreen hardwood / shrub)**

SYMBOLIC OF
n/a

BEARING FRUIT
April to May

From October to November, pale yellow and white flowers bloom from leaf axils, and their fruit ripen, turning red over the winter and into the following spring. The Japanese name *nawashirogumi* derives from the way that the fruit ripen when rice seedlings are being cultivated for spring (*nawashiro* are rice seedling nursery beds). For propagation, cultivating the seedlings grown from sowing the red seeds from ripe fruit is recommended. Otherwise, propagating with cuttings is easy.

Make good use of its bends by adjusting this tree into a half-hanging cliff* bonsai


The previous planting angle
Reshape bonsai with this branch.
Shorten to here.
No. 3 pot (3½ in / 9 cm) diameter
6 in (15 cm) to the root base
Replant to make better use of this bend.
½ in (1.5 cm)
1½ in (4 cm)
2 in (5 cm)
Cut off fully-grown branch on opposite side.
Trunk has grown together here.
Tilt planting angle even farther to make a half-hanging cliff.
Planting angle up to now.
2 in (5 cm) from top to bottom
Grow this bud out.
A round blue pot

GROWTH PERIOD RESHAPING
(June)

CONDITION WHEN BONSAI WAS FIRST ACQUIRED (March)
6 years after germinating from seed

A tree similar to a half-hanging cliff bonsai with a U-shaped bent trunk. It was replanted in a training pot because its roots were not good, and its branches, as raw material, have also been kept dramatically cut back.

ROOT SHORTENING

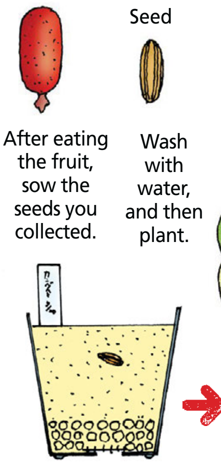
PLANTING IN POTS
Cut back the root mass so it is 0.4 in (1 cm) smaller than the pot it will be planted in.

PRUNING AND REPLANTING
(March)

**Half-hanging cliff: A standard style of tree shape where the trunk and branches do not hang down as far as with a hanging-cliff-style bonsai and the branch tip is at or above the base of the pot. Refer to page 13.*

CREATING BENDS IN SEED-GROWN SEEDLINGS

(May)
Seed sowing*



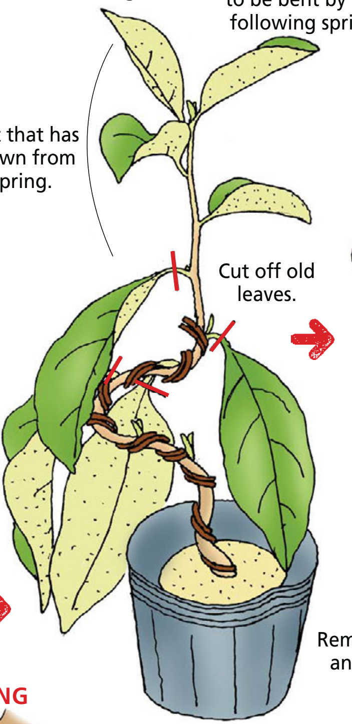
Seed

After eating the fruit, sow the seeds you collected.

Wash with water, and then plant.

REMOVING WIRING

(June of following year)
Leaf trimming



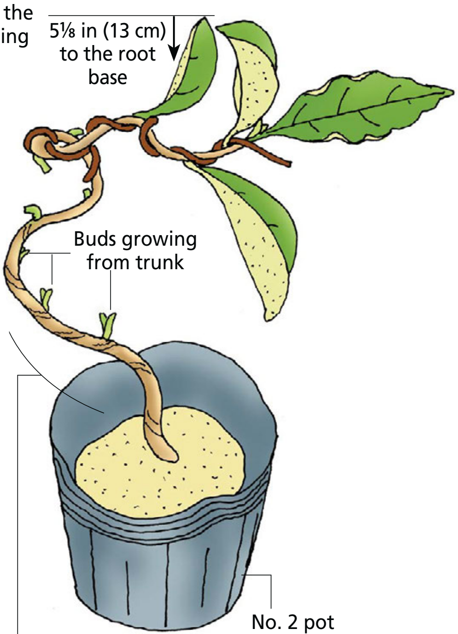
Part that has grown from spring.

This branch needs to be bent by the following spring

Cut off old leaves.

Take off wire set up in the spring to create a bend. Be careful not to damage the shoot growing from the trunk.

AFTER BENDING



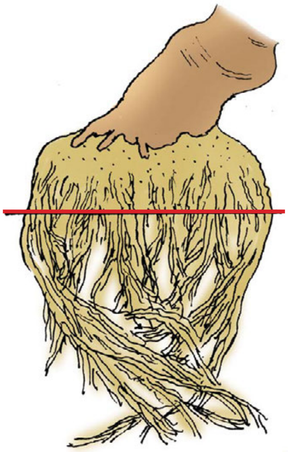
5⅛ in (13 cm) to the root base

Buds growing from trunk

Remove the wires and old leaves.

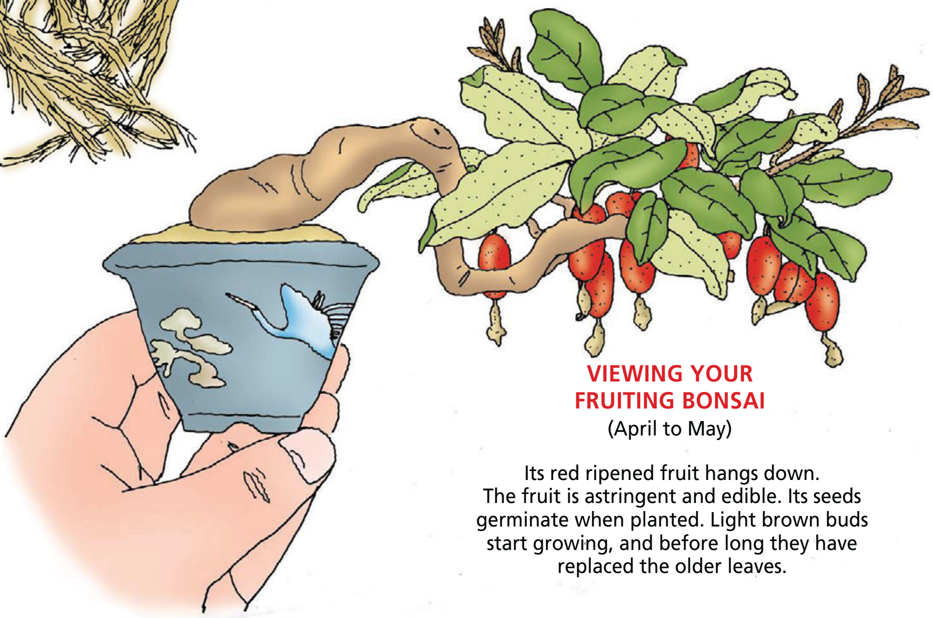
No. 2 pot (2⅜ in / 6 cm) diameter

ROOT SHORTENING



Shorten long roots to here.

HOW BONSAI APPEARS THE FOLLOWING YEAR



VIEWING YOUR FRUITING BONSAI

(April to May)

Its red ripened fruit hangs down. The fruit is astringent and edible. Its seeds germinate when planted. Light brown buds start growing, and before long they have replaced the older leaves.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Grafting				Pruning	Winter		
March	Cutting							
April		2–3 times / day						Growth period • Flowering (April–May)
May	Seedling		Add fertilizer		Wiring	Growth period		
June	Cutting							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Flowering (October–November)
November								
December						Winter		

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*Seed sowing: After collecting seeds, plant them immediately after removing flesh and washing the seeds, rather than storing them until the following spring.

Jolcham Oak

JAPANESE NAME
Konara

ALTERNATIVE NAME
Houso

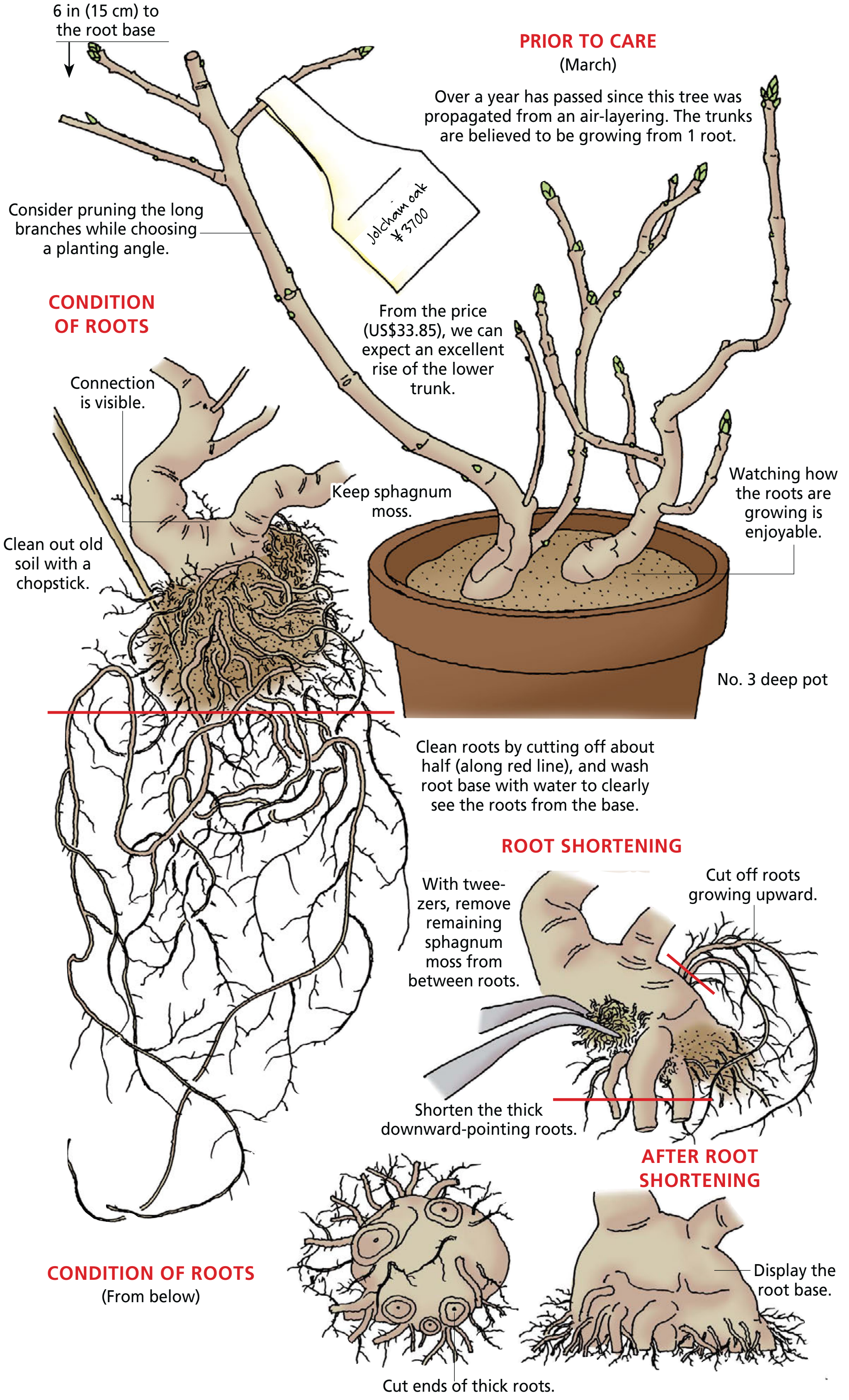
SCIENTIFIC NAME
Quercus serrata

CLASSIFICATION
Beech family (deciduous broadleaf tree / macrophanerophyte)

SYMBOLIC OF
Courage, Independence

BEARING FRUIT
October to November

Flowering is from April to May. This tree is a hermaphrodite*, so it has both long male flowers and short inconspicuous female flowers, which open for self-pollination. Their fruit (acorns) ripen in the autumn. Because oak produces durable lumber, it has been used for making sturdy tools for hundreds of years. Japanese forests are composed of this typical species of tree. Propagation is through air-layering or with cuttings.



PRIOR TO CARE
(March)

Over a year has passed since this tree was propagated from an air-layering. The trunks are believed to be growing from 1 root.

6 in (15 cm) to the root base

Consider pruning the long branches while choosing a planting angle.

From the price (US$33.85), we can expect an excellent rise of the lower trunk.

Keep sphagnum moss.

Watching how the roots are growing is enjoyable.

No. 3 deep pot

CONDITION OF ROOTS

Connection is visible.

Clean out old soil with a chopstick.

Clean roots by cutting off about half (along red line), and wash root base with water to clearly see the roots from the base.

ROOT SHORTENING

With tweezers, remove remaining sphagnum moss from between roots.

Cut off roots growing upward.

Shorten the thick downward-pointing roots.

AFTER ROOT SHORTENING

Display the root base.

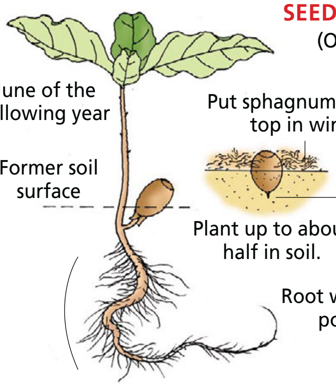
CONDITION OF ROOTS
(From below)

Cut ends of thick roots.

Hermaphrodite: A tree (or other plant) that is furnished with both male and female flowers.

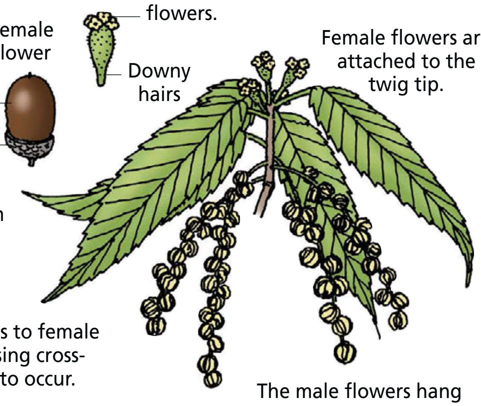
SEED SOWING

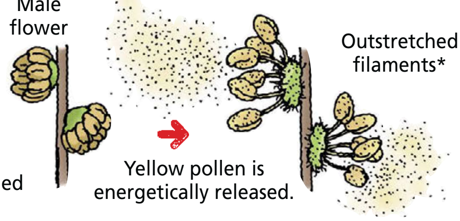
(October)


June of the following year
Former soil surface
Put sphagnum moss on top in winter.
Plant up to about half in soil.
Root will sprout from pointed part.
The root is thick.

FLOWERS AND FRUIT

Flowers (April to May)

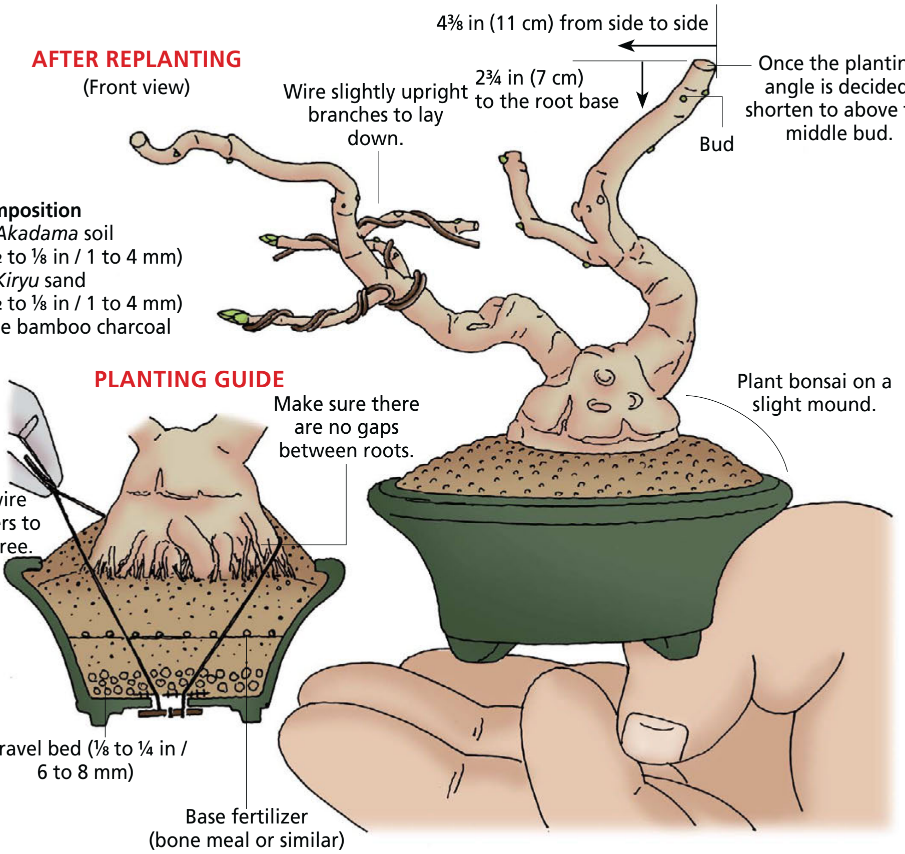

Female flower
Oblong
Acorn cupule
It bears several flowers.
Downy hairs
Female flowers are attached to the twig tip.
The male flowers hang down, attached to a lower part on long stems.


Pollen attaches to female flowers, causing cross-pollination to occur.
Male flower
When opened
Yellow pollen is energetically released.
Outstretched filaments*

AFTER REPLANTING

(Front view)

PLANTING GUIDE


4⅜ in (11 cm) from side to side
2¾ in (7 cm) to the root base
Wire slightly upright branches to lay down.
Once the planting angle is decided, shorten to above the middle bud.
Bud
Plant bonsai on a slight mound.
Make sure there are no gaps between roots.
Twist wire with pliers to secure tree.
Gravel bed (⅛ to ¼ in / 6 to 8 mm)
Base fertilizer (bone meal or similar) under soil mix

Soil composition

80% *Akadama* soil
(1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand
(1/32 to ⅛ in / 1 to 4 mm)
+ some bamboo charcoal

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling			Layering • Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter				Growth period						Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (April–May) • Sprout separating (July-August)						Prime • Fruiting (October–November)		

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*Filaments: Thread-like stalks that support the anthers of stamens.

Autumn Olive

JAPANESE NAME
Akigumi

ALTERNATIVE NAME
Japanese silverberry

SCIENTIFIC NAME
Elaeagnus umbellata

CLASSIFICATION
Oleaster family (deciduous hardwood / shrub)

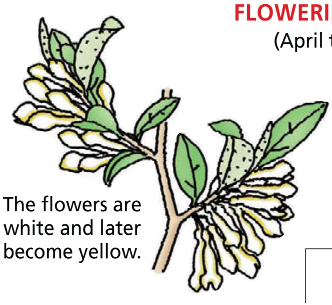
SYMBOLIC OF
Watchfulness

BEARING FRUIT
October to November

Blooming in April and May, its flowers, which are hermaphroditic, change from white to yellow. There are thorns on the branches, and several flowers dangle from each leaf axil. These have no petals, but the sepals are petal-shaped. Its name derives from the ¼ in (6 to 8 mm) red spherical fruit that ripens in autumn. Propagation is with seed-grown seedlings, cuttings and so on.

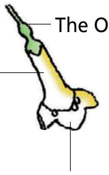
FLOWERING GUIDE

(April to May)



The flowers are white and later become yellow.

FLOWER SHAPE

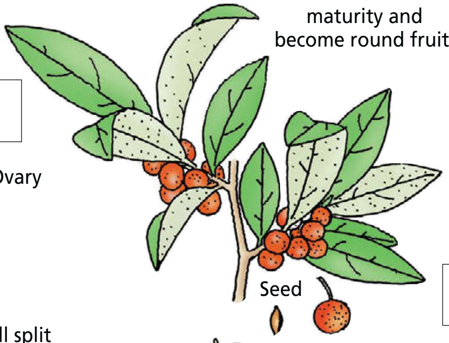


The roughly ¼-in (7-mm) calyx is cylindrical and has no petals.

The tip will split into 4 sections.

FRUIT-BEARING GUIDE

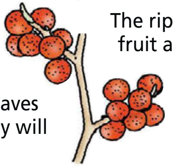
(October to November)



Ovaries reach maturity and become round fruit.

FRUIT SHAPE

The ripe ¼-in (7 to 8-mm) fruit are red and round.

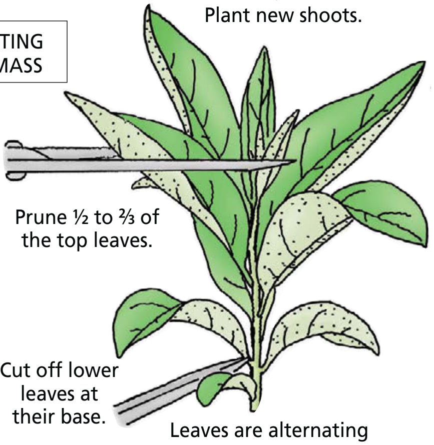


Even if their leaves have fallen, they will bear fruit.

PROPAGATING WITH CUTTINGS

(June, 1 year later)
Plant new shoots.

ADJUSTING LEAF MASS

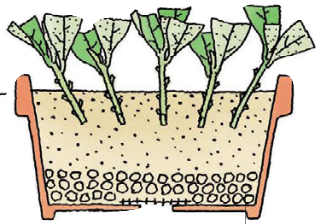


Prune ½ to ⅔ of the top leaves.

Cut off lower leaves at their base.

Leaves are alternating and their undersides are a grayish-white.

EXAMPLE OF HOW TO PLANT



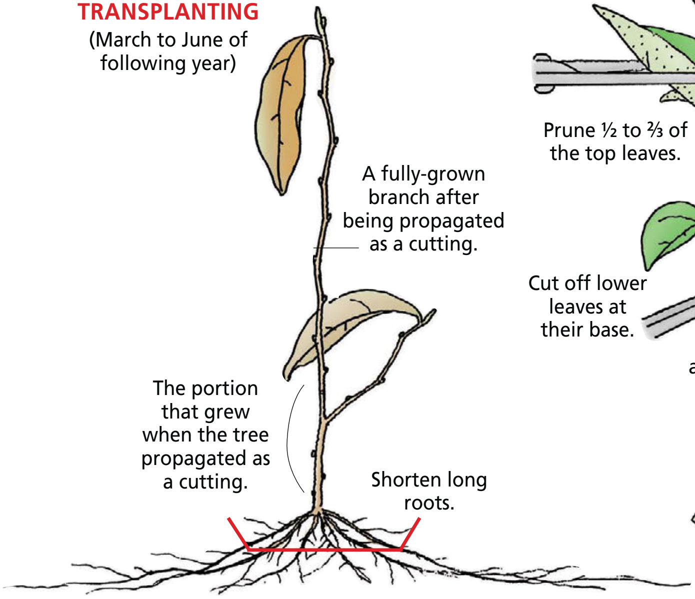
The soil mix is fine grade *Akadama* soil or *Kiryu* sand.

Bed of gravel

Closer toward the edge, plant cuttings at increasingly outward angles for better exposure to sunlight.

TRANSPLANTING

(March to June of following year)

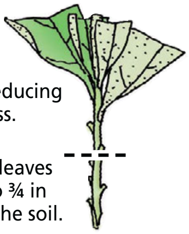


A fully-grown branch after being propagated as a cutting.

The portion that grew when the tree propagated as a cutting.

Shorten long roots.

CUTTINGS FOR PROPAGATION



Plant after reducing leaf mass.

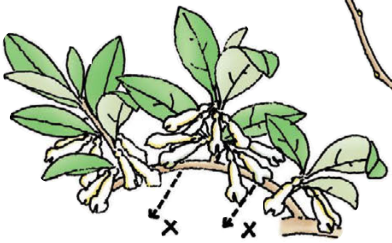
Remove lower leaves and plant ½ to ¾ in (1.5 to 2 cm) in the soil.

Cut into a V-shape and plant.

FLOWERING

(April to May)

Upward-facing buds will grow and blossom.



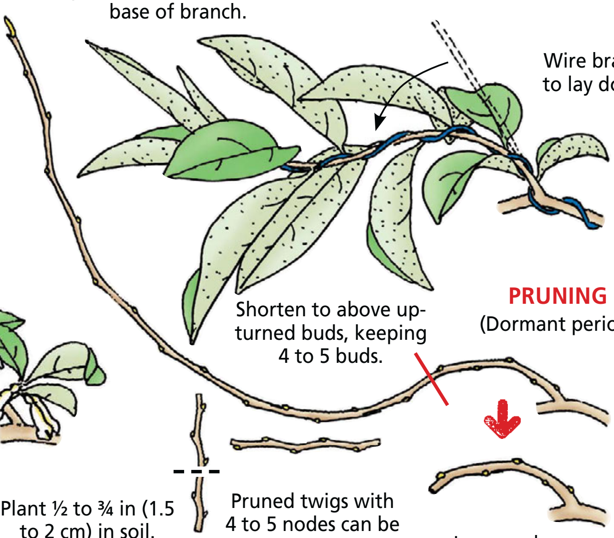
Cut off branches that grow downward.

WIRING LONG BRANCHES

(June of following year)

Allow the branch tip to grow in order to thicken base of branch.

Wire branch to lay down.



Shorten to above up-turned buds, keeping 4 to 5 buds.

PRUNING

(Dormant period)

Plant ½ to ¾ in (1.5 to 2 cm) in soil.

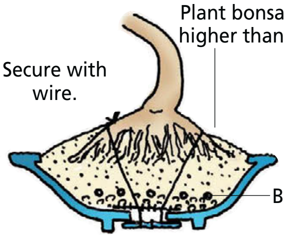
Pruned twigs with 4 to 5 nodes can be planted and propagated as cuttings.

Leave a shape like a cresting wave.

HOW TO PLANT

Plant bonsai slightly higher than pot rim.

Secure with wire.



Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

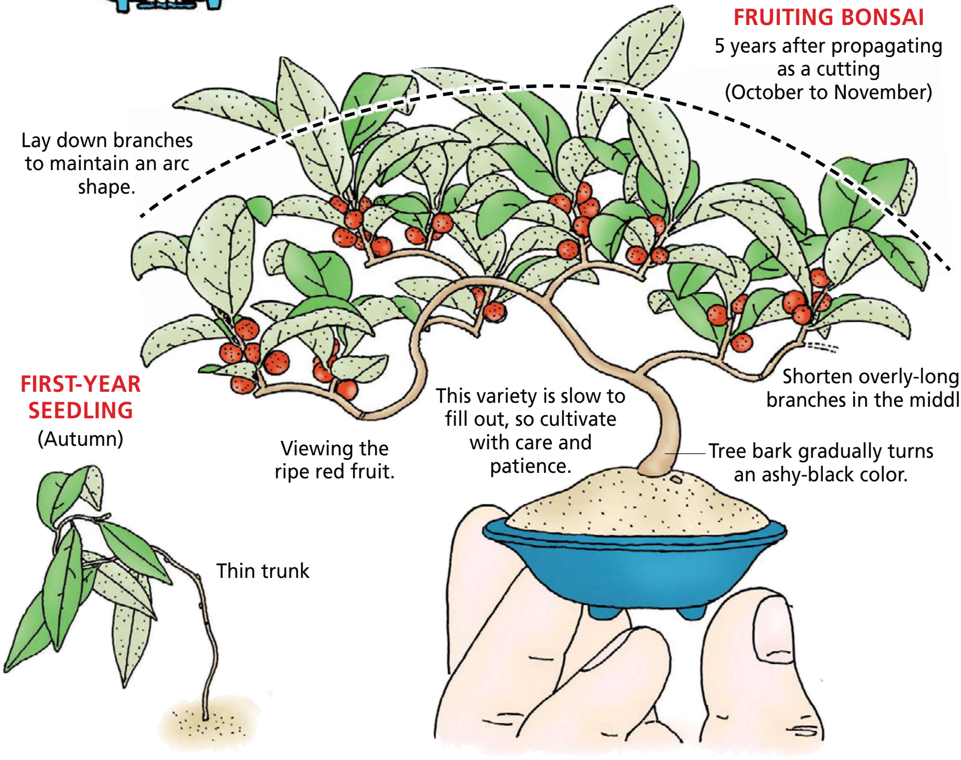
Base fertilizer

VIEWING YOUR FRUITING BONSAI

5 years after propagating as a cutting

(October to November)

Lay down branches to maintain an arc shape.



Shorten overly-long branches in the middle.

This variety is slow to fill out, so cultivate with care and patience.

Viewing the ripe red fruit.

Tree bark gradually turns an ashy color.

FIRST-YEAR SEEDLING

(Autumn)

Thin trunk

Trunk is slow to thicken

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling			Layering • Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			▨
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping		Pruning			Wiring				Pruning			
Sterilization		Winter			Growth period							Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (April–May)						Prime • Fruiting (October–November)		▨

Japanese Barberry

JAPANESE NAME
Megi

ALTERNATIVE NAME
Thunberg's barberry

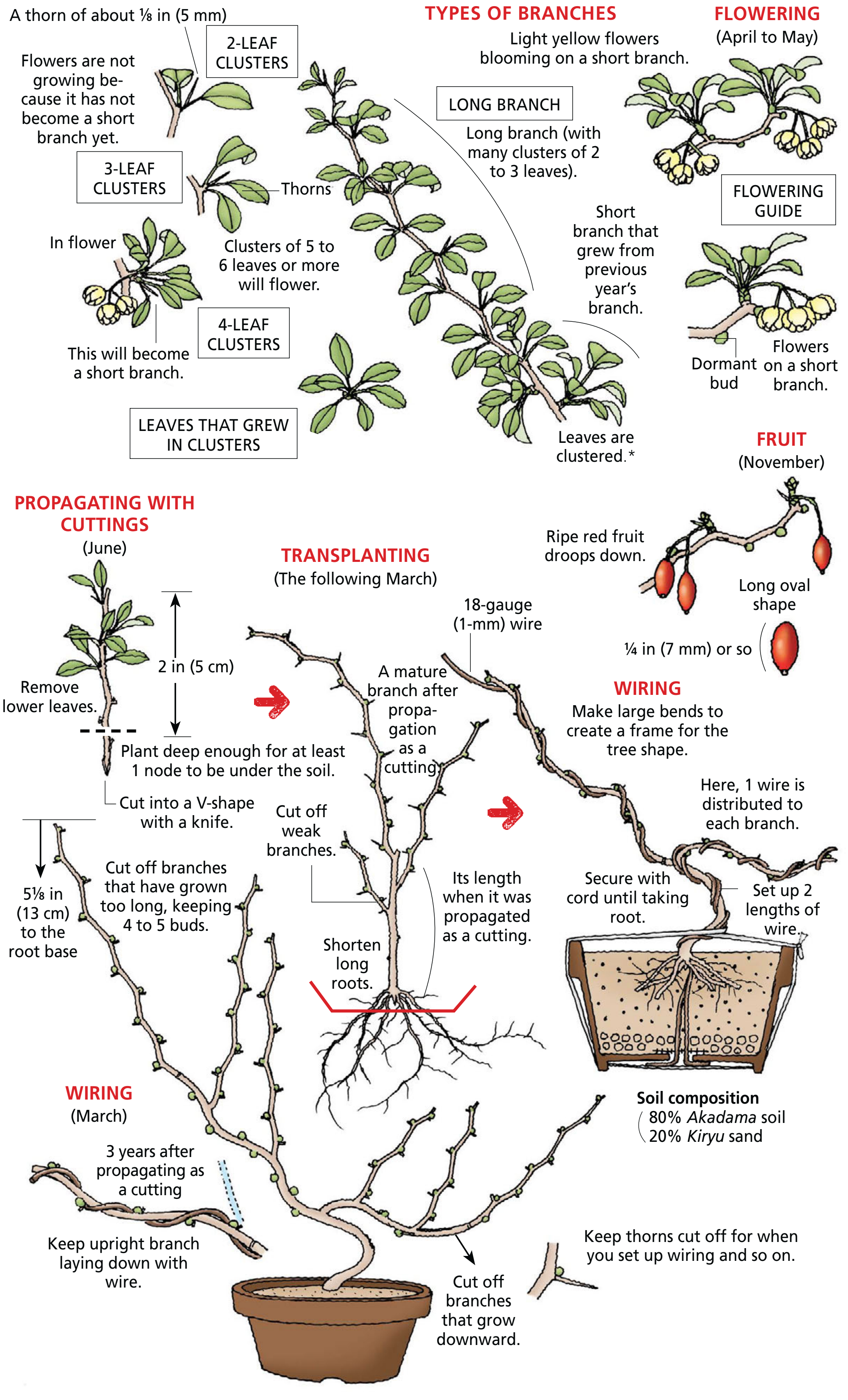
SCIENTIFIC NAME
Berberis thunbergii

CLASSIFICATION
Barberry (deciduous broadleaf tree / shrub)

SYMBOLIC OF
Irritability

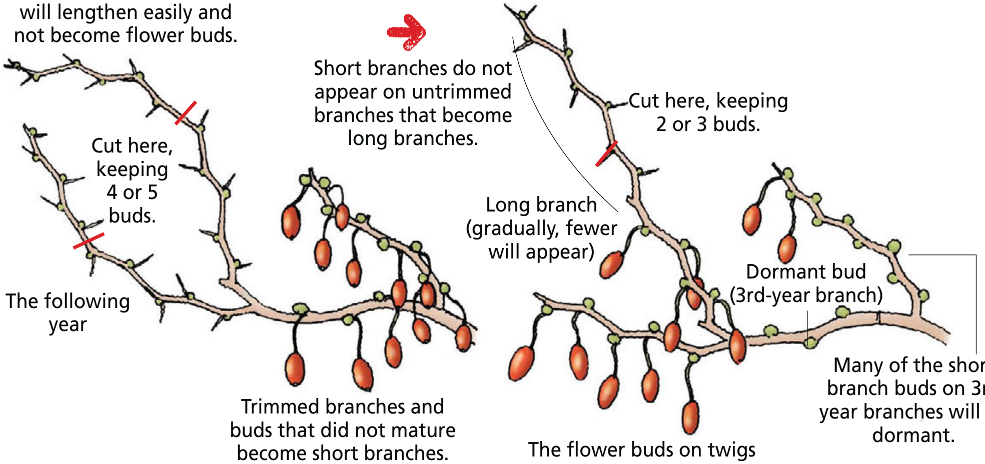
BEARING FRUIT
October to November

Pale yellow flowers open in April and May. The fruit will ripen and turn red from autumn into winter. The changes in color of the leaves are lovely as well. Its Japanese name (*megi*, literally "eye-tree") originated from the past use of its boiled leaves and bark for washing the eyes. Also known in Japan as *kotori tomarazu*, which refers to the way that its many twigs and thorns prevent even small birds from landing on it. Propagating is with cuttings, seed-grown seedlings, or laying down roots to develop new roots.


A thorn of about ⅛ in (5 mm)
2-LEAF CLUSTERS
Flowers are not growing because it has not become a short branch yet.
3-LEAF CLUSTERS
Thorns
In flower
Clusters of 5 to 6 leaves or more will flower.
This will become a short branch.
4-LEAF CLUSTERS
LEAVES THAT GREW IN CLUSTERS
TYPES OF BRANCHES
Light yellow flowers blooming on a short branch.
LONG BRANCH
Long branch (with many clusters of 2 to 3 leaves).
Short branch that grew from previous year's branch.
Leaves are clustered.*
FLOWERING
(April to May)
FLOWERING GUIDE
Dormant bud
Flowers on a short branch.
FRUIT
(November)
Ripe red fruit droops down.
Long oval shape
¼ in (7 mm) or so
PROPAGATING WITH CUTTINGS
(June)
Remove lower leaves.
2 in (5 cm)
Plant deep enough for at least 1 node to be under the soil.
Cut into a V-shape with a knife.
TRANSPLANTING
(The following March)
A mature branch after propagation as a cutting
Cut off weak branches.
Its length when it was propagated as a cutting.
Shorten long roots.
18-gauge (1-mm) wire
WIRING
Make large bends to create a frame for the tree shape.
Here, 1 wire is distributed to each branch.
Secure with cord until taking root.
Set up 2 lengths of wire.
Soil composition
80% Akadama soil
20% Kiryu sand
5⅛ in (13 cm) to the root base
Cut off branches that have grown too long, keeping 4 to 5 buds.
WIRING
(March)
3 years after propagating as a cutting
Keep upright branch laying down with wire.
Cut off branches that grow downward.
Keep thorns cut off for when you set up wiring and so on.

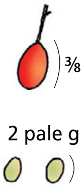
Cluster: When several leaves appear to be growing from one point.

BRANCH SHAPING


The 1 or 2 buds at the tip will lengthen easily and not become flower buds.
Cut here, keeping 4 or 5 buds.
The following year
Trimmed branches and buds that did not mature become short branches.
Short branches do not appear on untrimmed branches that become long branches.
Cut here, keeping 2 or 3 buds.
Long branch (gradually, fewer will appear)
Dormant bud (3rd-year branch)
Many of the short branch buds on 3rd year branches will be dormant.
The flower buds on twigs from the previous year will flower and bear fruit.

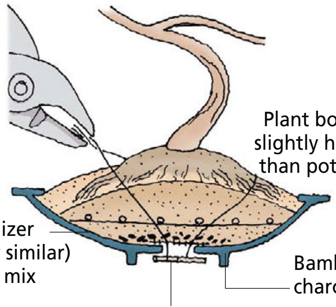
SEED SOWING

(Late October)


⅜ in (8 mm) or so
2 pale green seeds
¼ in (6 mm) or so

PLANTING GUIDE

Mound the soil higher in the middle than the rim of the bowl, and place the rooted tree on it.

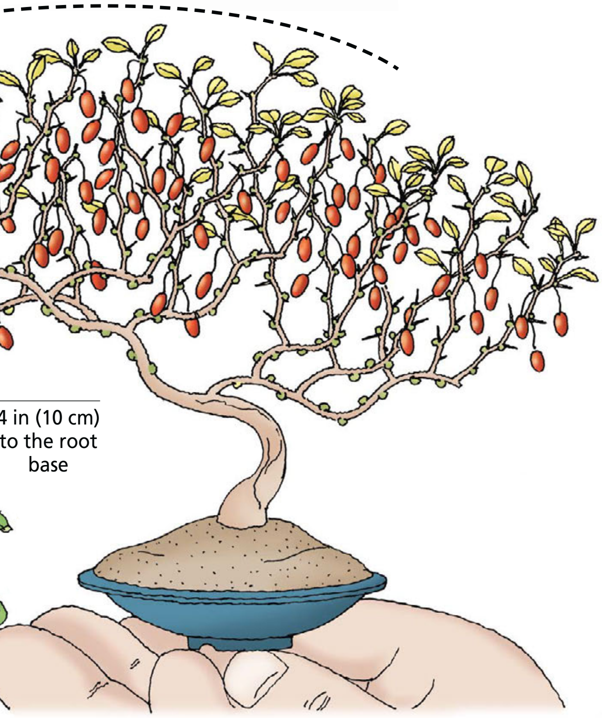

While pulling tightly with pliers, twist wire to secure.
Plant bonsai slightly higher than pot rim.
Base fertilizer (bone meal or similar) under soil mix
Bamboo charcoal
Thin wire wrapped around thick piece of wire.

Soil composition

80% *Akadama* soil
20% *Kiryu* sand

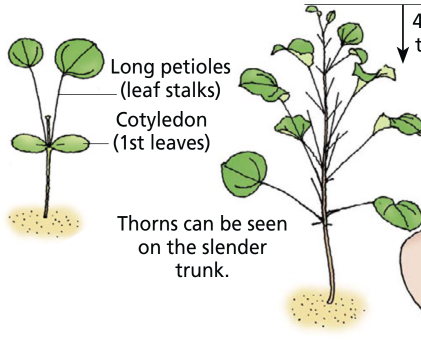
VIEWING THE FRUIT AND AUTUMN COLORS OF YOUR BONSAI

(October to November)



Lay branches down to spread them out horizontally, creating better exposure to sunlight for them.

SEED-GROWN SEEDLINGS


(Mid-May)
(Late August)
Long petioles (leaf stalks)
Cotyledon (1st leaves)
4 in (10 cm) to the root base
Thorns can be seen on the slender trunk.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting			Layering • Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (April–May)						Prime • Fruiting (October–November)		

Queen Coralbead

JAPANESE NAME
Aoshijirafuji

ALTERNATIVE NAME
Kamiebi

SCIENTIFIC NAME
Cocculus orbiculatus

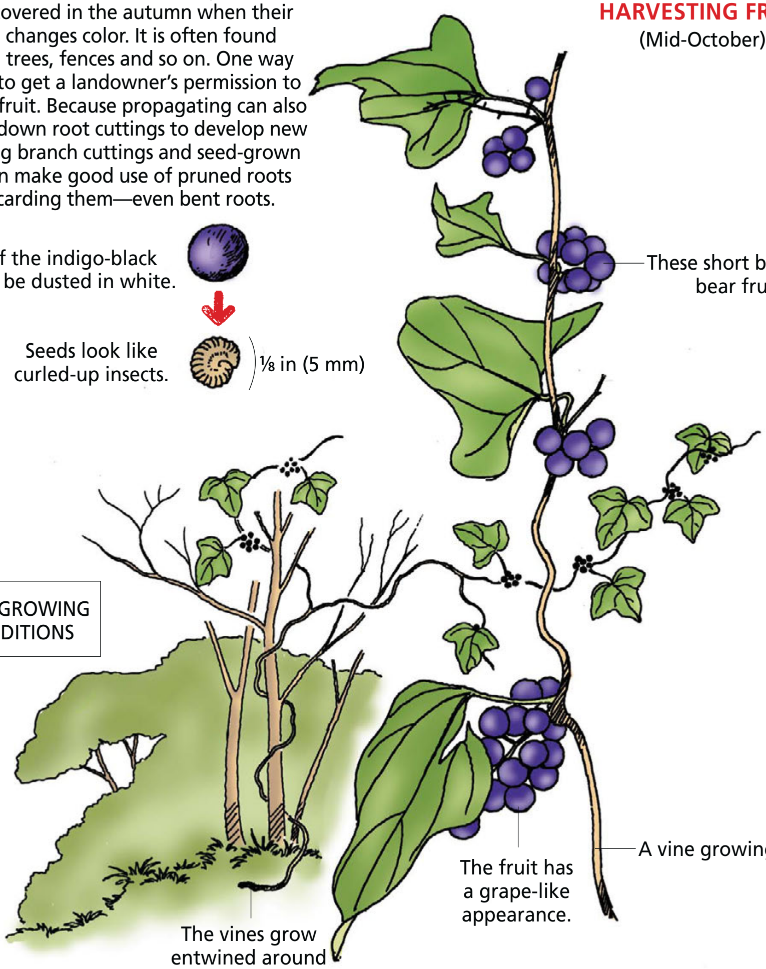
CLASSIFICATION
Menispermaceae
(deciduous vine)

SYMBOLIC OF
n/a

BEARING FRUIT
September to November

Conical inflorescences of yellow and white florets grow from leaf axils and open during July and August. It is a dioecious plant. The spherical fruit, ¼ in (6 to 7 mm) are indigo-black, and ripen in the autumn. Propagating with cuttings or seed-grown seedlings is recommended. If the fruit is harvested and sown in autumn, it will germinate the following spring.

Ordinarily, the plants are difficult to recognize, but they're easily discovered in the autumn when their fruit ripens and changes color. It is often found entwined around trees, fences and so on. One way to obtain seeds is to get a landowner's permission to pick some of their fruit. Because propagating can also be done by laying down root cuttings to develop new roots, besides using branch cuttings and seed-grown seedlings, you can make good use of pruned roots rather than discarding them—even bent roots.



HARVESTING FRUIT
(Mid-October)

The outside of the indigo-black fruit appears to be dusted in white.

Seeds look like curled-up insects.

⅛ in (5 mm)

These short branches bear fruit.

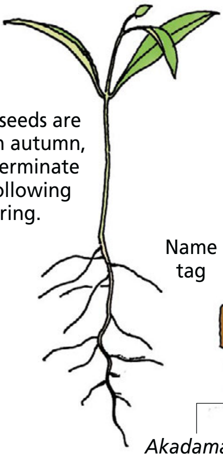
WILD GROWING CONDITIONS

The fruit has a grape-like appearance.

A vine growing wild

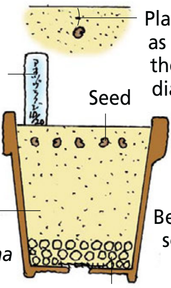
The vines grow entwined around trees.

SEED-GROWN SEEDLINGS
(Mid-May)



When seeds are sown in autumn, they germinate the following spring.

SEED SOWING
(Late October)

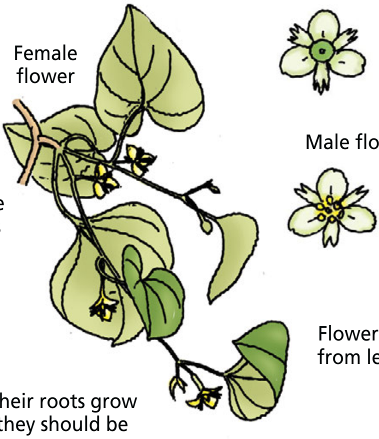


Plant twice as deep as the seed's diameter.

Because their roots grow so well, they should be planted in deep training pots.

FLOWERING GUIDE

FLOWERING
(Early July)



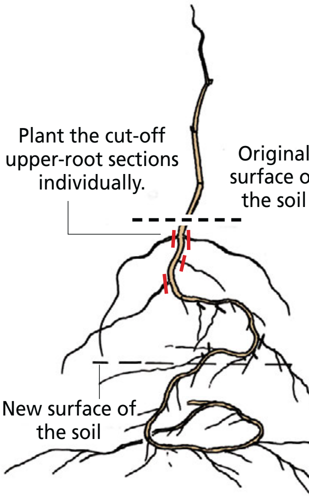
There is a green pistil in the center.

There is a yellow stamen in the center.

Flowers bloom from leaf axils.

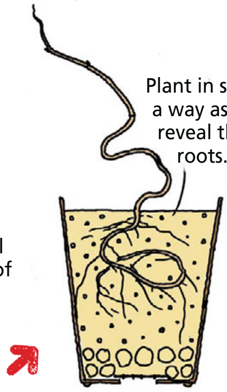
TRANSPLANTING

(March of 2nd year)


Plant the cut-off upper-root sections individually.
Original surface of the soil
New surface of the soil

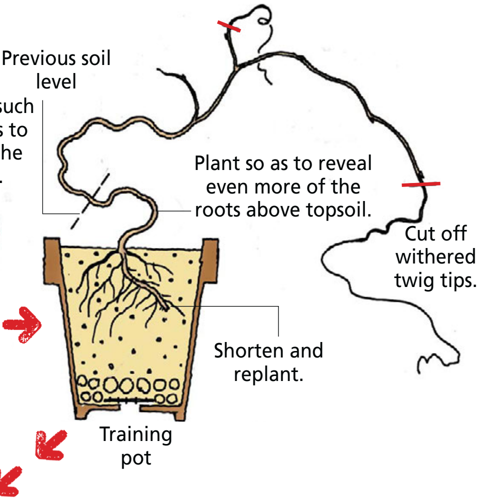
AFTER PLANTING

Transplant into a plastic training pot


Plant in such a way as to reveal the roots.

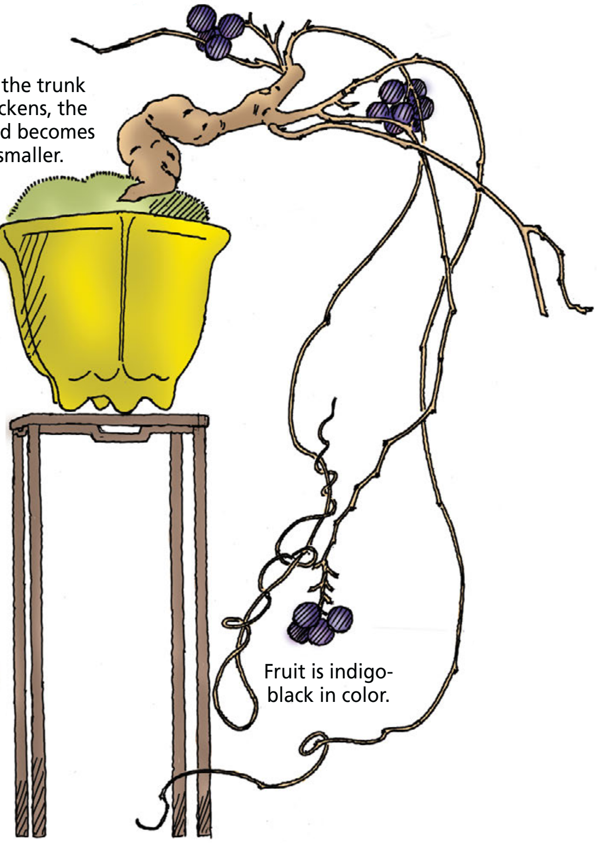
TRANSPLANTING

(March of 3rd year)


Previous soil level
Plant so as to reveal even more of the roots above topsoil.
Cut off withered twig tips.
Shorten and replant.
Training pot

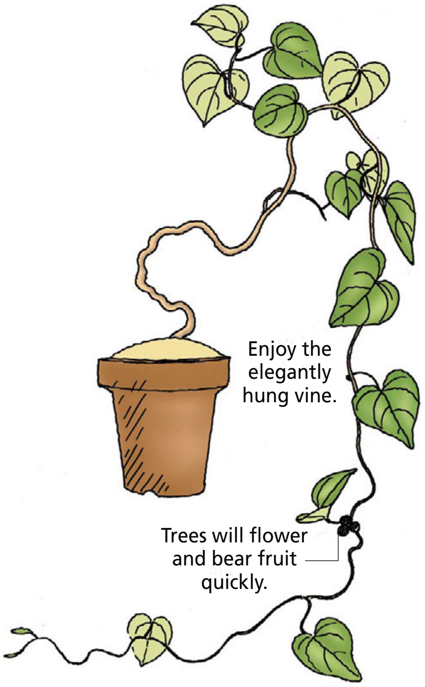
HOW BONSAI APPEARS IN THE FUTURE

(December)
15 years after
propagating as a cutting


As the trunk thickens, the bend becomes smaller.
Fruit is indigo-black in color.

AUTUMN

(October)


Enjoy the elegantly hung vine.
Trees will flower and bear fruit quickly.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling			Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			▨
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (July–August)						Prime • Fruiting (September–November)		▨

Ginkgo

JAPANESE NAME
Ichou

ALTERNATIVE NAME
Maidenhair tree

SCIENTIFIC NAME
Ginkgo biloba

CLASSIFICATION
Ginkgo (deciduous / macrophanerophyte)

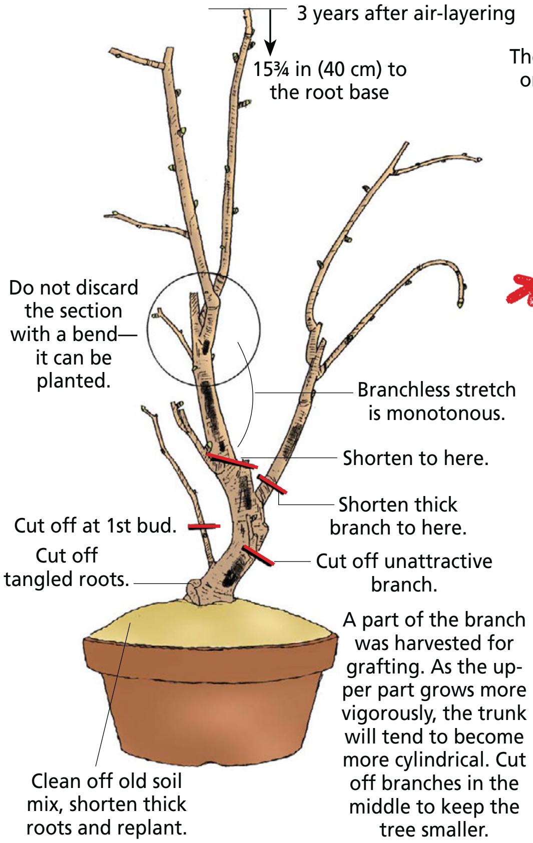
SYMBOLIC OF
Longevity

BEARING FRUIT
October to November

Its pale yellow flowers bloom in April. It is dioecious, and fruit is borne on the female trees. That such large trees, both male and female, can be the source of small bonsai itself deserves admiration. If you desire a female tree, you should choose from seeds, buy a fruit-bearing tree, or graft a female branch onto a male tree.

PRUNING AND REPLANTING

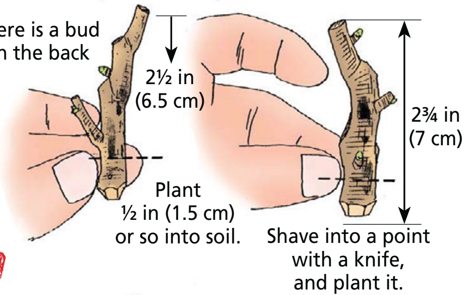
(March)


3 years after air-layering
15¾ in (40 cm) to the root base
Do not discard the section with a bend—it can be planted.
Branchless stretch is monotonous.
Shorten to here.
Shorten thick branch to here.
Cut off at 1st bud.
Cut off tangled roots.
Cut off unattractive branch.
Clean off old soil mix, shorten thick roots and replant.

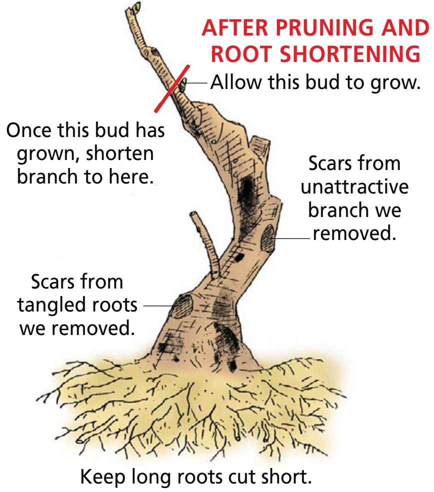
A part of the branch was harvested for grafting. As the upper part grows more vigorously, the trunk will tend to become more cylindrical. Cut off branches in the middle to keep the tree smaller.

PROPAGATING WITH CUTTINGS

Trim the cut-off piece smaller to strengthen its bend

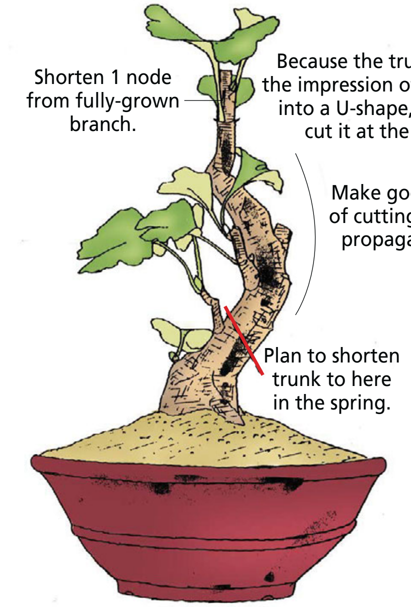

There is a bud on the back
2½ in (6.5 cm)
Plant ½ in (1.5 cm) or so into soil.
2¾ in (7 cm)
Shave into a point with a knife, and plant it.

AFTER PRUNING AND ROOT SHORTENING


Allow this bud to grow.
Once this bud has grown, shorten branch to here.
Scars from unattractive branch we removed.
Scars from tangled roots we removed.
Keep long roots cut short.

PRUNING

(Autumn of 2nd year)

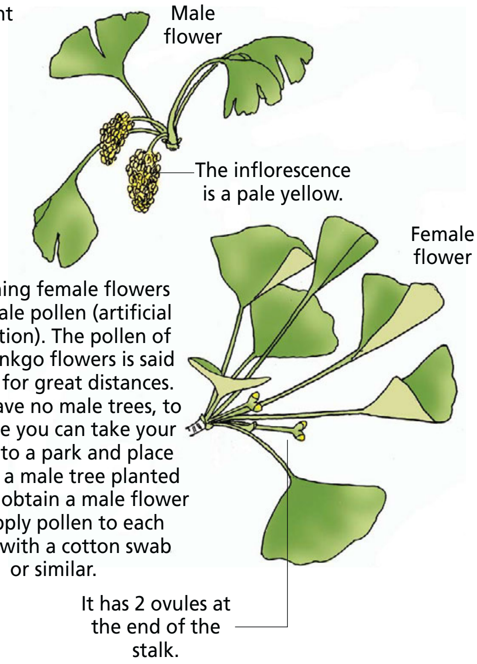

Shorten 1 node from fully-grown branch.
Plan to shorten trunk to here in the spring.

Because the trunk is giving the impression of having bent into a U-shape, we plan to cut it at the red line.

Make good use of cuttings with propagation.

FLOWERING

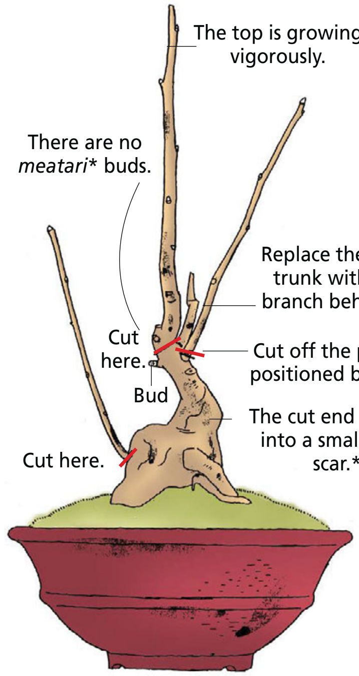
(April)


Male flower
The inflorescence is a pale yellow.
Female flower
It has 2 ovules at the end of the stalk.

Furnishing female flowers with male pollen (artificial pollination). The pollen of male ginkgo flowers is said to drift for great distances. If you have no male trees, to pollinate you can take your female to a park and place it under a male tree planted there, or obtain a male flower and apply pollen to each flower with a cotton swab or similar.

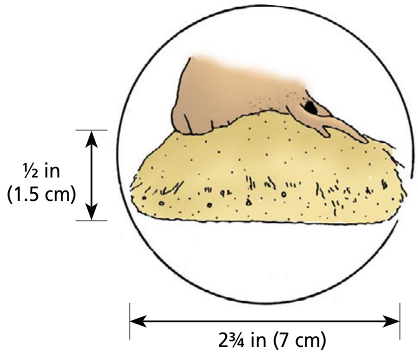
PRUNING AND REPLANTING

(Spring of 4th year)


The top is growing vigorously.
There are no *meatari** buds.
Replace the main trunk with the branch behind it.
Cut here.
Cut off the poorly positioned branch.
Bud
The cut end will heal into a small closed scar.**
Cut here.

Move to a smaller pot, because the tree has become smaller.

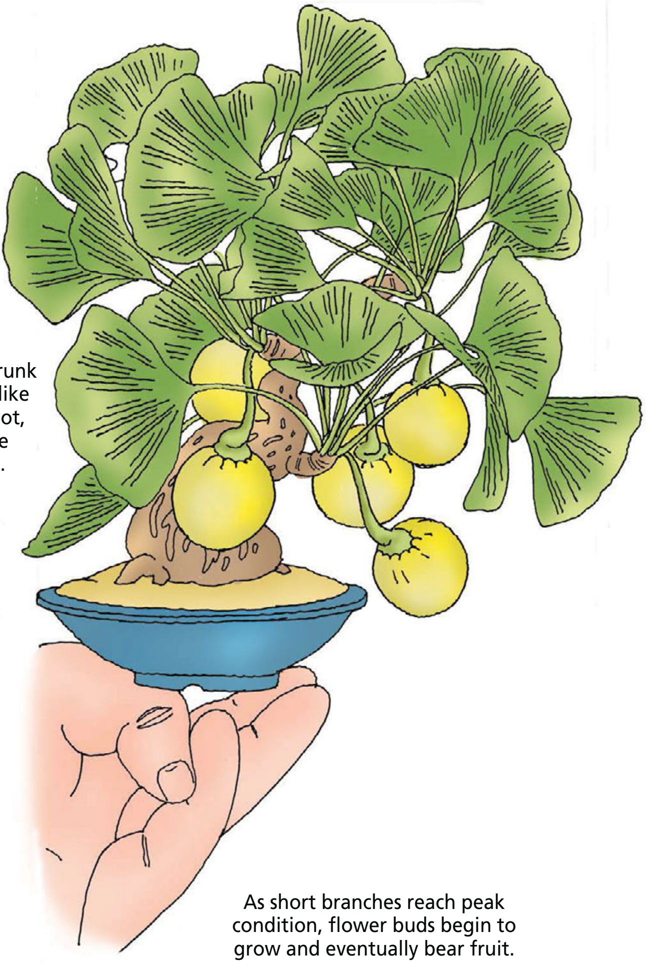
AFTER ROOT SHORTENING


½ in (1.5 cm)
2¾ in (7 cm)

Shorten the thick root to allow for more small roots

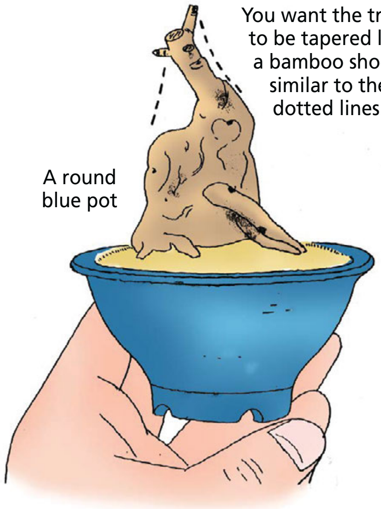
VIEWING THE FRUIT OF THE BONSAI

(October to November)



As short branches reach peak condition, flower buds begin to grow and eventually bear fruit. Pulled down by its yellow fruit, the bonsai has a lovely appearance.

AFTER REPLANTING


You want the trunk to be tapered like a bamboo shoot, similar to the dotted lines.
A round blue pot

Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Grafting				Pruning	Winter		
March	Cutting • Seedling							
April		2–3 times / day	Add fertilizer			Growth period		Growth period • Flowering (March–April)
May								
June	Layering • Cutting				Wiring			
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November	Seedling							
December						Winter		

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*Meatari: *a bit of jargon from the bonsai world, regarding how and where adventitious buds had grown.*

***A closed scar: When the cambium layer attempts to heal a wound by closing over the surface of the wound.*

Chinese Quince

JAPANESE NAME
Karin

ALTERNATIVE NAME
Karanashi

SCIENTIFIC NAME
Pseudocydonia sinensis

CLASSIFICATION
***Rosaceae* (deciduous evergreen tree, macrophanerophyte)**

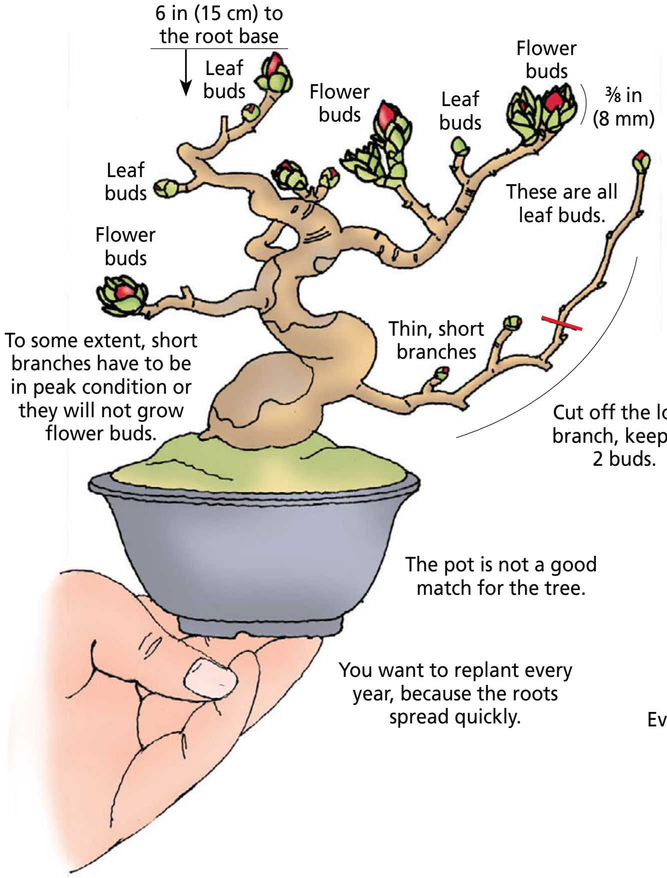
SYMBOLIC OF
Possibility

BEARING FRUIT
October to November

Flowers in March and April. A small bonsai, it bears fruit that are 1⅛ to 1¾ in (3 to 4.5 cm) in diameter. Be sure to provide plenty of additional fertilizer rich in phosphoric acid. If tree becomes too dry while it is bearing fruit, this may cause the fruit to fall. If propagation was through grafting, the tree will bloom and bear fruit in about four to five years. Use seed-grown seedlings for grafting rootstock.

BEFORE REPLANTING (March)

10 years after germinating from seed


6 in (15 cm) to the root base
Leaf buds
Flower buds
Leaf buds
Flower buds
⅜ in (8 mm)
Leaf buds
Flower buds
These are all leaf buds.
Thin, short branches

To some extent, short branches have to be in peak condition or they will not grow flower buds.

Cut off the long branch, keeping 2 buds.

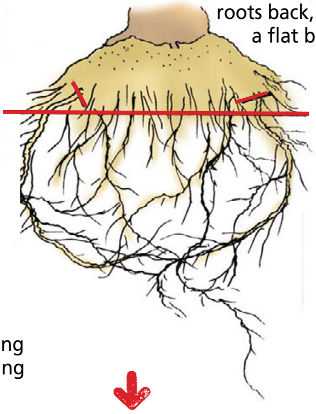
The pot is not a good match for the tree.

You want to replant every year, because the roots spread quickly.

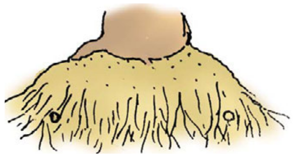
ROOT SHORTENING

Shorten thick vigorous roots.

Cut long thin roots back, leaving a flat base.



AFTER ROOT SHORTENING



Even with roots cut off, there are no changes like flower buds falling off and so on.

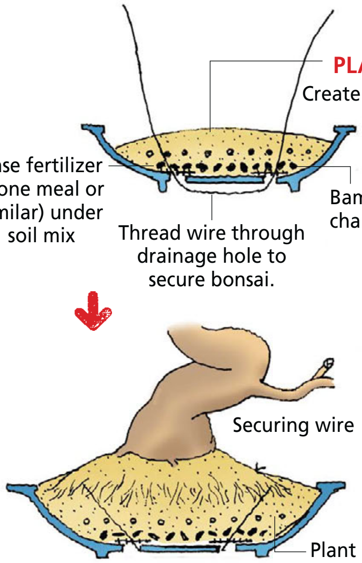
AFTER REPLANTING

When temperatures are low, nurture and manage your bonsai in a shelter or greenhouse.

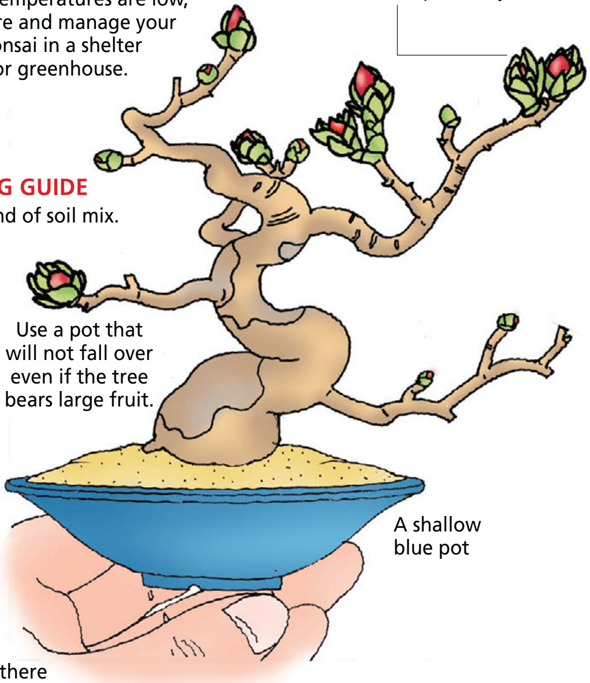
If the fresh green winter buds begin to get big, you should quickly finish working on the trees you haven't replanted yet.

PLANTING GUIDE

Create a mound of soil mix.

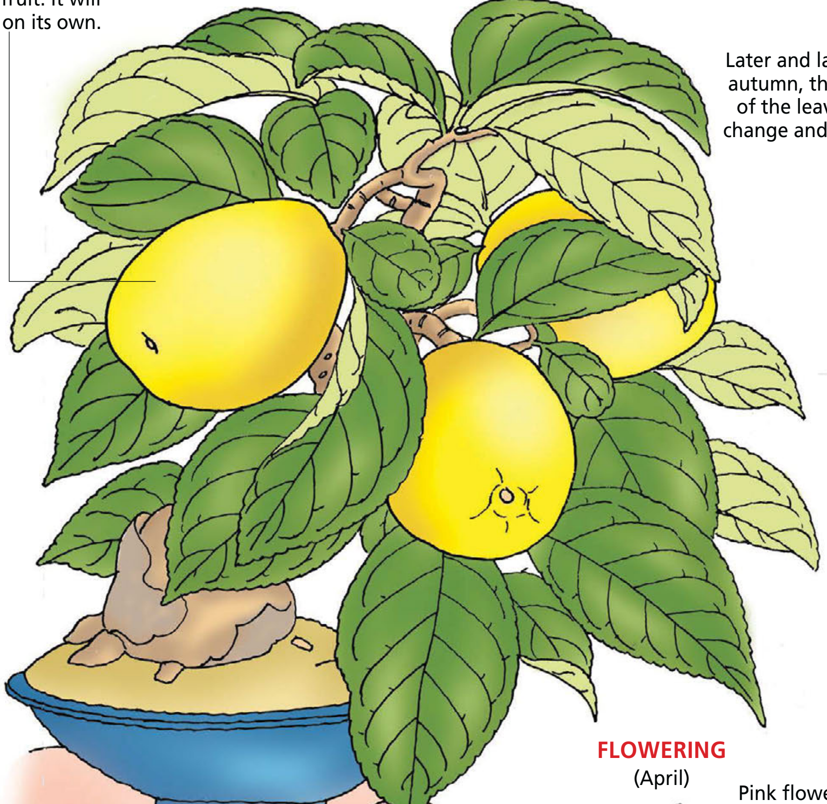

Base fertilizer (bone meal or similar) under soil mix
Bamboo charcoal
Thread wire through drainage hole to secure bonsai.
Securing wire

Plant so that there are no gaps between tree and new soil mix.


A shallow blue pot

Use a pot that will not fall over even if the tree bears large fruit.

VIEWING YOUR FRUITING BONSAI

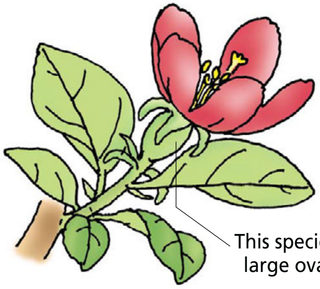


A sweet smelling yellow fruit. It will fall off on its own.

Later and later into autumn, the colors of the leaves will change and darken.

FLOWERING

(April)

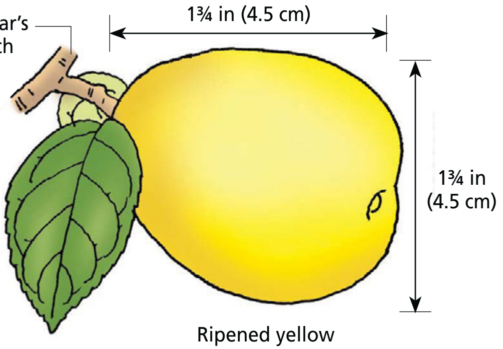


Pink flowers

When fruiting has stopped, the stems naturally become thicker.

This species has large ovaries.

FRUIT-BEARING GUIDE



Last year's branch

Flowering and fruiting on a very short branch

Ripened yellow fruit

The fruit cannot be eaten, however, the scent is nice and it can be used in the fermentation of wine. Do not throw away the seed, if you collect them right away, you can sow them the following year. If a tree bears fruit one year, the chances of it bearing fruit the following year are very low, even if it flowers.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting			Layering • Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting		▨	▨									
Growth State	Dormancy period			Growth period • Flowering (March–April) • Sprout separating (July–August)						Prime • Fruiting (October–December)		

Japanese Hawthorn

JAPANESE NAME
Sanzashi

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Crataegus cuneata

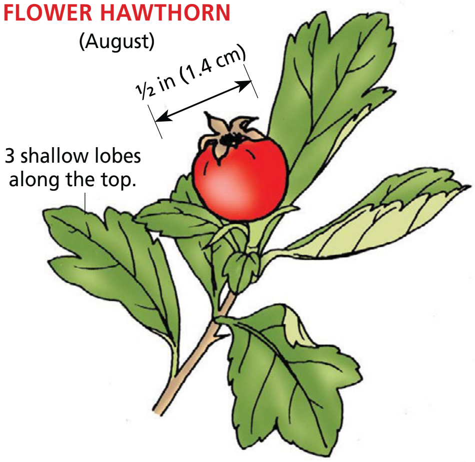
CLASSIFICATION
Rosaceae **(deciduous evergreen tree / shrub)**

SYMBOLIC OF
Hope, Only love

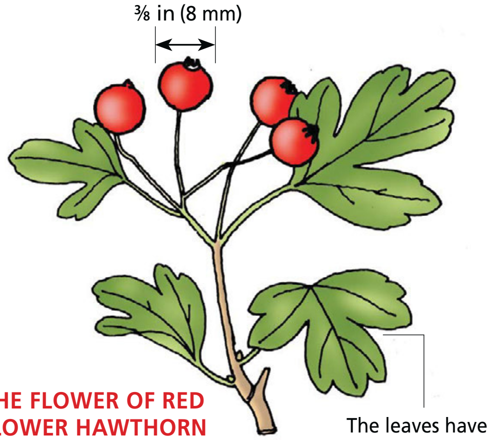
BEARING FRUIT
October to November

The white flower and red flower hawthorns of Japan are varieties* of Western hawthorn. Both single-layer and double-blossomed flowers bloom around May. Fruit are ⅜ to ¾ in (1 or 2 cm) or so. Its sharp thorns are actually specialized twigs. Grafting is recommended for propagation, but may take a number of years to bloom.

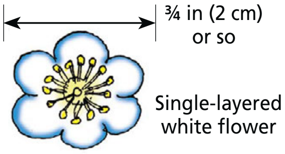
FRUIT OF THE WHITE FLOWER HAWTHORN
(August)


½ in (1.4 cm)
3 shallow lobes along the top.

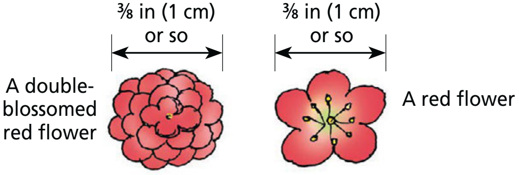
FRUIT OF THE RED FLOWER HAWTHORN
(August)


⅜ in (8 mm)
The leaves have deep recesses between lobes.

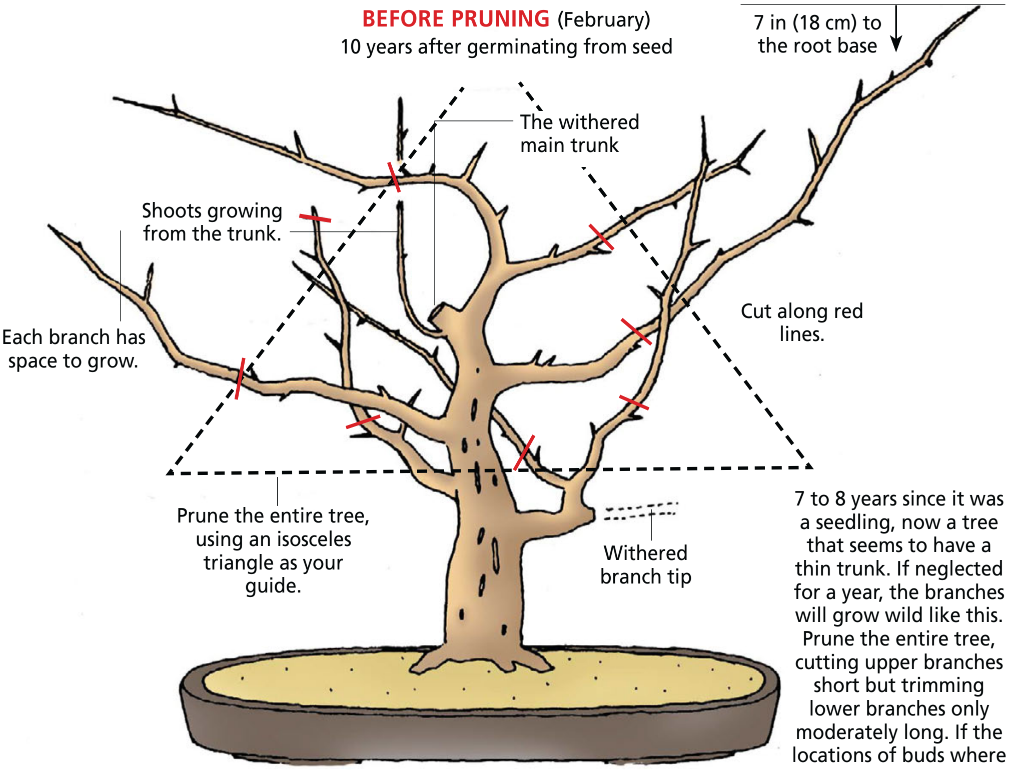
FLOWERS OF THE WHITE FLOWER HAWTHORN
(May)


¾ in (2 cm) or so
Single-layered white flower

THE FLOWER OF RED FLOWER HAWTHORN
(May)


⅜ in (1 cm) or so
⅜ in (1 cm) or so
A double-blossomed red flower
A red flower

The current shape of the tree


BEFORE PRUNING (February)
10 years after germinating from seed

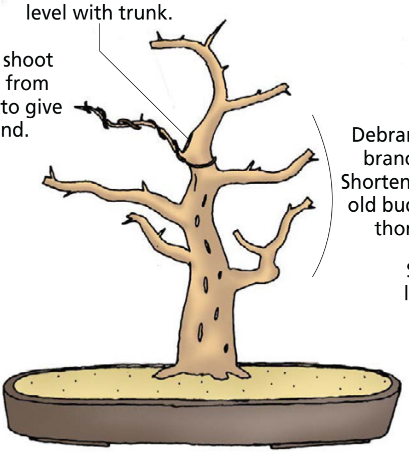
7 in (18 cm) to the root base
The withered main trunk
Shoots growing from the trunk.
Each branch has space to grow.
Cut along red lines.
Prune the entire tree, using an isosceles triangle as your guide.
Withered branch tip

7 to 8 years since it was a seedling, now a tree that seems to have a thin trunk. If neglected for a year, the branches will grow wild like this. Prune the entire tree, cutting upper branches short but trimming lower branches only moderately long. If the locations of buds where you want to cut are not clear, keep the thorn and cut higher up the branch.

**Variety: Something that belongs to a species as a whole, but varying slightly from other individual examples.*

AFTER PRUNING (March)

Shorten every branch midway, following down to old buds, so tree is nicely balanced throughout.



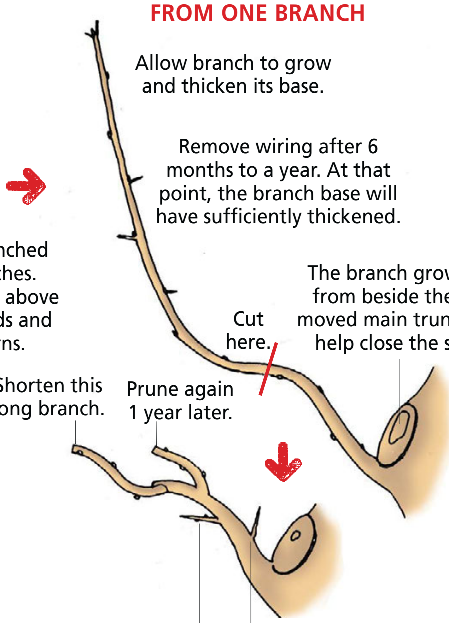
Shave down to be level with trunk.

Wire the shoot growing from the trunk to give it a bend.

Debranched branches. Shorten above old buds and thorns.

Because the pot is slightly too large, replanting every 2 years is recommended.

SHAPING NEW BRANCHES FROM ONE BRANCH



Allow branch to grow and thicken its base.

Remove wiring after 6 months to a year. At that point, the branch base will have sufficiently thickened.

The branch growing from beside the removed main trunk will help close the scar.

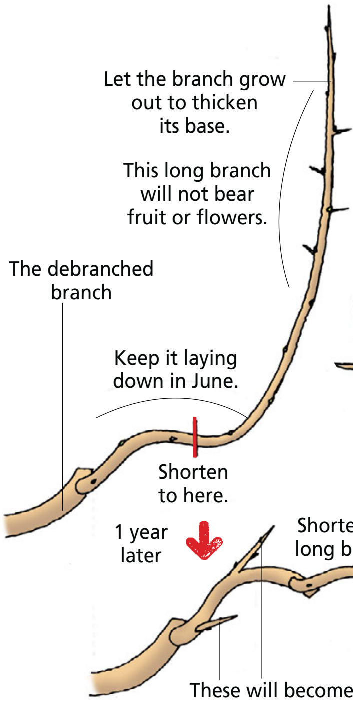
Cut here.

Shorten this long branch.

Prune again 1 year later.

More short branches appear.

SHAPING BRANCHES THAT WERE DEBRANCHED



Let the branch grow out to thicken its base.

This long branch will not bear fruit or flowers.

The debranched branch

Keep it laying down in June.

Shorten to here.

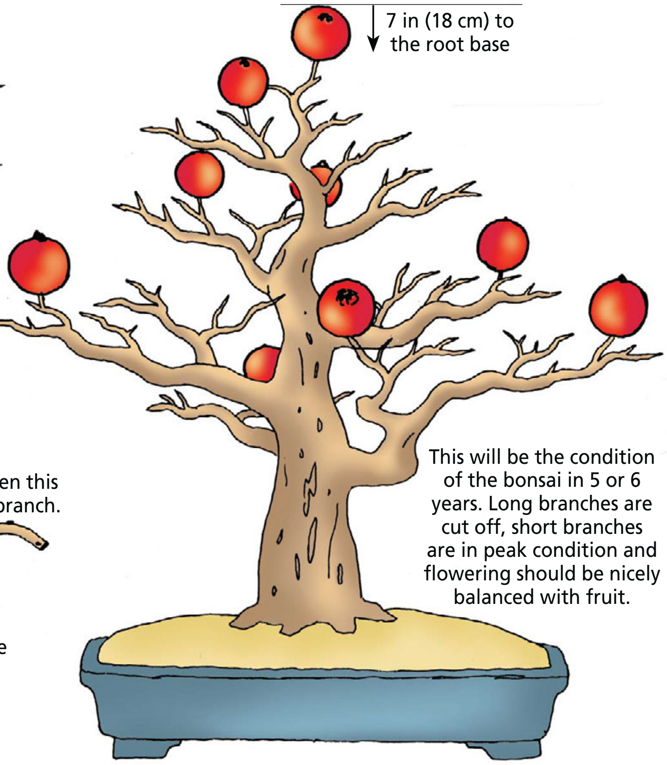
1 year later

Shorten this long branch.

These will become short branches.

HOW IT APPEARS AFTER SEVERAL YEARS

(October to November)



7 in (18 cm) to the root base

This will be the condition of the bonsai in 5 or 6 years. Long branches are cut off, short branches are in peak condition and flowering should be nicely balanced with fruit.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Roots insertion			Layering • Cutting					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day			2–3 times / day		
Fertilizing				Add fertilizer			Water & fertilizer			Add fertilizer		
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (May–June)						Prime • Fruiting (October–November)		

Firethorn

JAPANESE NAME
Pirakansa

ALTERNATIVE NAMES
Tokiwasanzashi, tachibanamodoki

SCIENTIFIC NAMES
Pyracantha coccinea, Pyracantha angustifolium

CLASSIFICATION
***Rosaceae* (evergreen broadleaf tree / under 33 feet /10 m)**

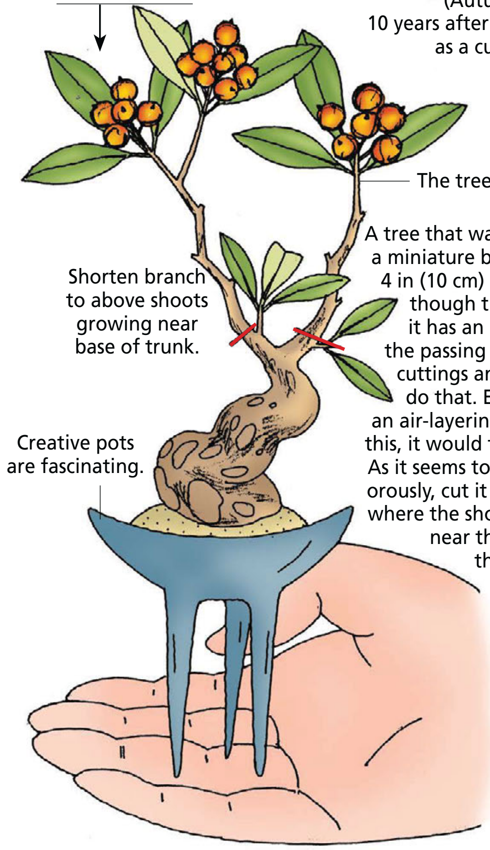
SYMBOLIC OF
Mercy

BEARING FRUIT
October to November

Flowering is in May and June. Small florets like hydrangeas flower in groups around the top of the tree. Firethorn is a general term that covers both *Pyracantha coccinea* M.Roem (with red fruit) and *Pyracantha angustifolia* (with orange fruit). There is little reason to fret about fruiting, as most flowers become fruit. Propagation is with cuttings, seed-grown seedlings, and air-layering.

CURRENT CONDITION

(Autumn)
10 years after propagating as a cutting



6 in (15 cm) to the root base

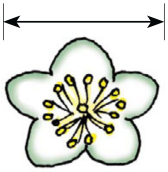
The tree stretches upward.

Shorten branch to above shoots growing near base of trunk.

Creative pots are fascinating.

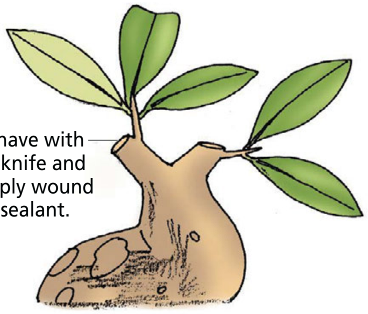
A tree that was intended to be a miniature bonsai of around 4 in (10 cm) in height. Even though the tree is small, it has an aged look, and the passing of 10 years for cuttings and seedlings will do that. Even to produce an air-layering that looks like this, it would take 4 to 5 years. As it seems to be growing vigorously, cut it down to around where the shoots are growing near the base of the branches.

SHAPE OF THE FLOWER



About ⅜ in (1 cm)

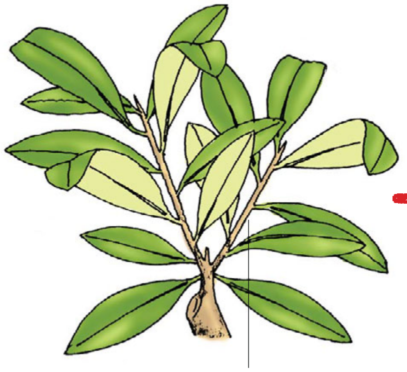
AFTER PRUNING



Shave with a knife and apply wound sealant.

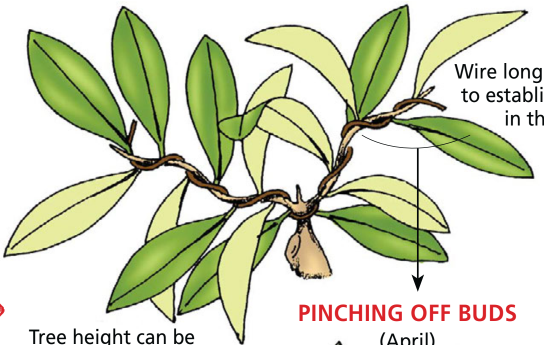
WIRING

(June to July)



Because growing branches tend to grow vigorously upward, wire them to lay down while they are still slender.

AFTER WIRING

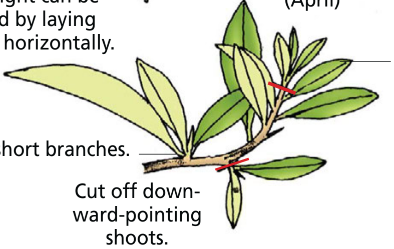


Wire long branches to establish bends in them.

Tree height can be reduced by laying branches horizontally.

PINCHING OFF BUDS

(April)



Pinch off shoots that you do not want growing beyond here.

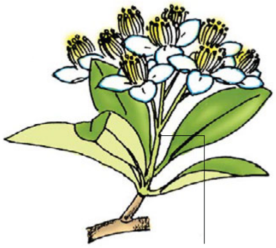
Cut off short branches.

Cut off downward-pointing shoots.

Pyracantha will frequently spontaneously cross-pollinate, and even the shapes of the leaves have become similar. *Pyracantha angustifolium* should be kept separate before the flowering season.

FLOWERING

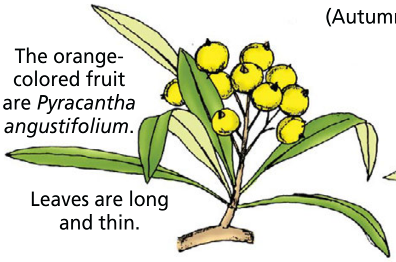
(May to end of June)



Some flowering on a fully-grown twig tip.

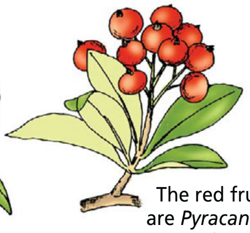
FRUIT

(Autumn)



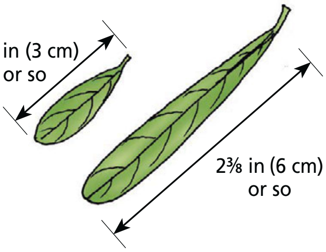
The orange-colored fruit are *Pyracantha angustifolium*.

Leaves are long and thin.



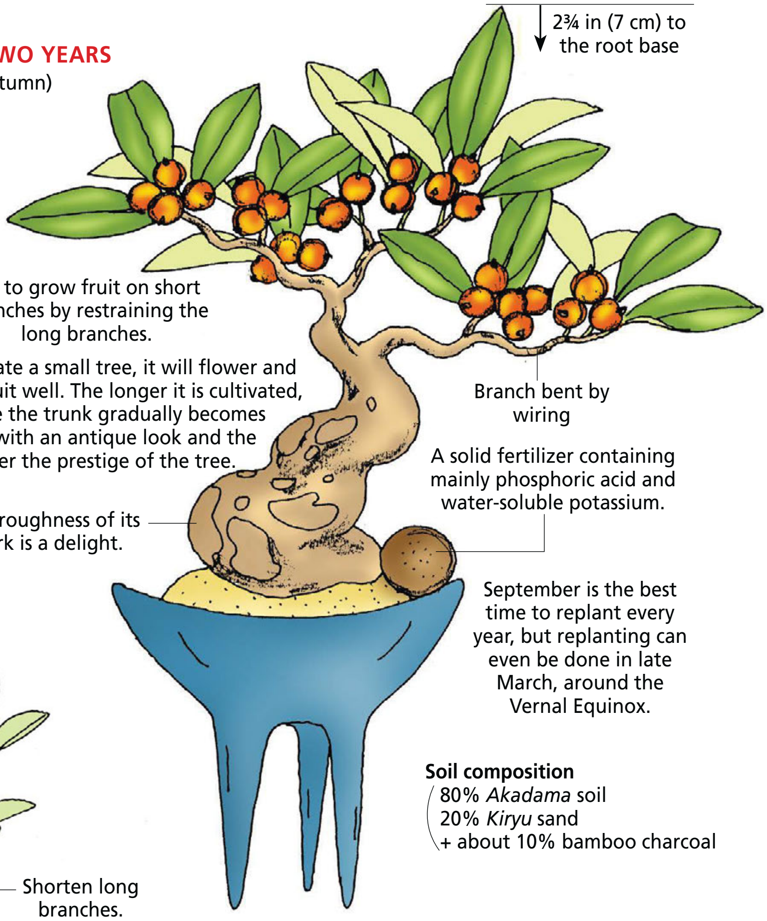
The red fruit are *Pyracantha coccinea*.

LEAF COMPARISON



AFTER TWO YEARS

(Autumn)


2¾ in (7 cm) to the root base

Try to grow fruit on short branches by restraining the long branches.

If you cultivate a small tree, it will flower and even bear fruit well. The longer it is cultivated, the more the trunk gradually becomes tinged with an antique look and the greater the prestige of the tree.

Even the roughness of its tree bark is a delight.

Branch bent by wiring

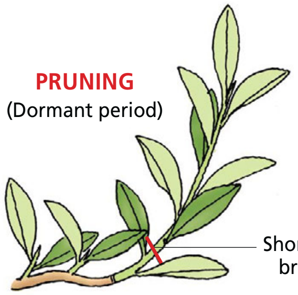
A solid fertilizer containing mainly phosphoric acid and water-soluble potassium.

September is the best time to replant every year, but replanting can even be done in late March, around the Vernal Equinox.

Soil composition
80% *Akadama* soil
20% *Kiryu* sand
+ about 10% bamboo charcoal

PRUNING

(Dormant period)



Shorten long branches.

Keep the short branches.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting	Cutting		Layering					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning	Wiring			Wiring			Pruning			
Sterilization		Winter		Growth period								Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (May–June)						Prime • Fruiting (October–November)		

Kadsura Vine

JAPANESE NAME
Binangazura

ALTERNATIVE NAME
Kadsura

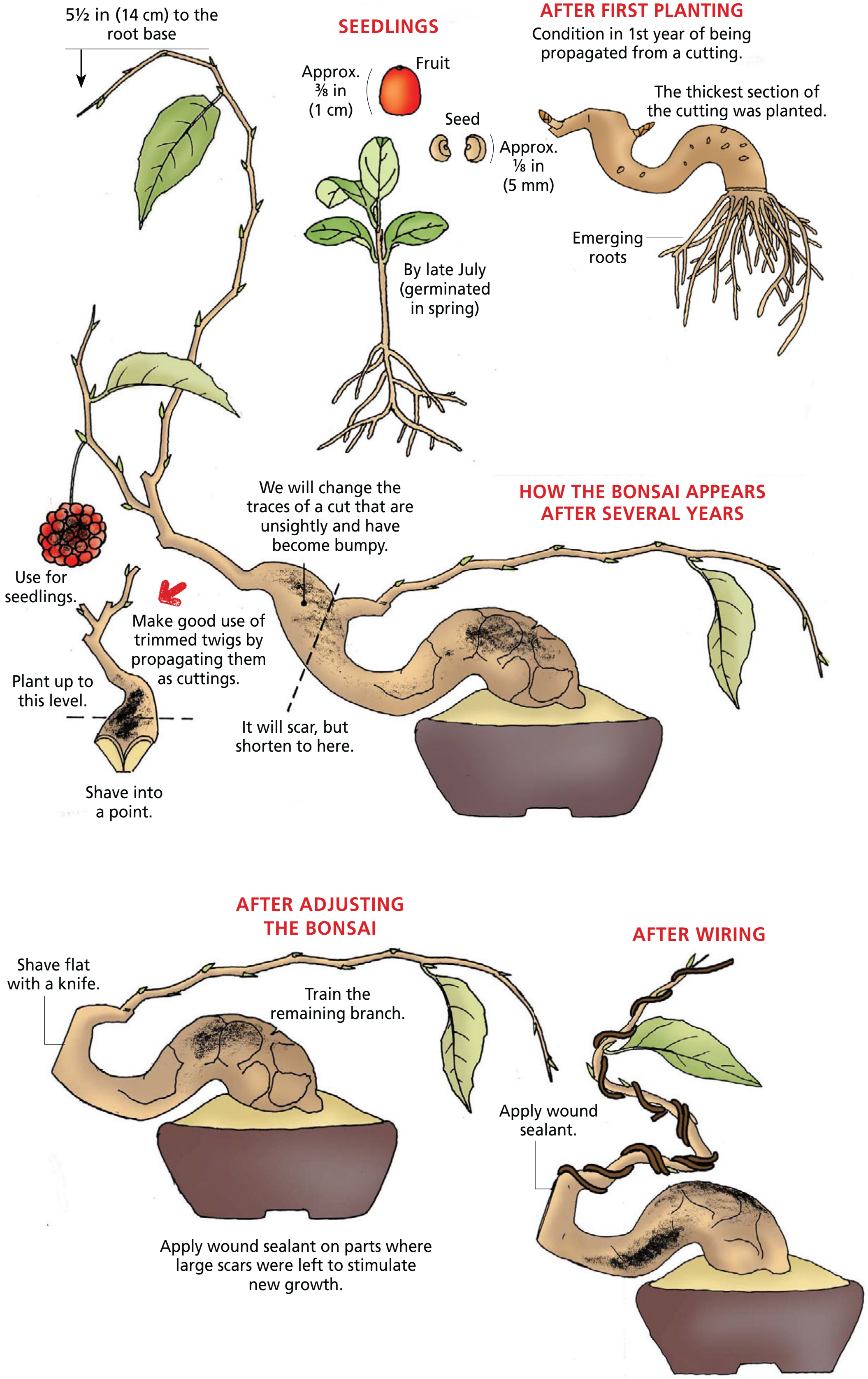
SCIENTIFIC NAME
Kadsura japonica

CLASSIFICATION
Pine family (deciduous broadleaf tree / shrub)

SYMBOLIC OF
Reunion

BEARING FRUIT
October to November

In August, pale yellow flowers bloom. Looking much like Japanese sweets, its red fruit can be viewed for some time, until the following February or so. Although a hermaphroditic plant, using male flowers from the same plant for cross-pollination makes bearing fruit difficult, so furnishing pollen from the flowers of other trees is best. Propagating with cuttings or seed-grown seedlings is recommended.



5½ in (14 cm) to the root base

Use for seedlings.

Make good use of trimmed twigs by propagating them as cuttings.

Plant up to this level.

Shave into a point.

SEEDLINGS

Fruit

Approx. ⅜ in (1 cm)

Seed

Approx. ⅛ in (5 mm)

By late July (germinated in spring)

AFTER FIRST PLANTING

Condition in 1st year of being propagated from a cutting.

The thickest section of the cutting was planted.

Emerging roots

HOW THE BONSAI APPEARS AFTER SEVERAL YEARS

We will change the traces of a cut that are unsightly and have become bumpy.

It will scar, but shorten to here.

AFTER ADJUSTING THE BONSAI

Shave flat with a knife.

Train the remaining branch.

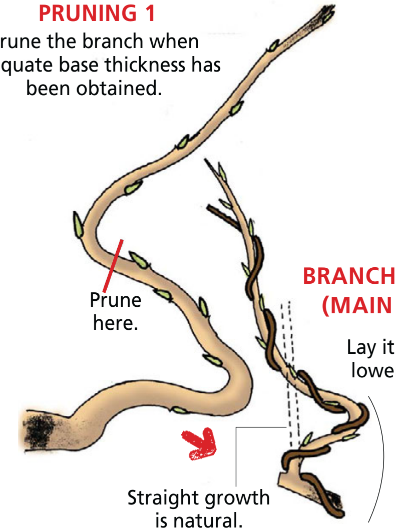
Apply wound sealant on parts where large scars were left to stimulate new growth.

AFTER WIRING

Apply wound sealant.

PRUNING 1

Prune the branch when adequate base thickness has been obtained.

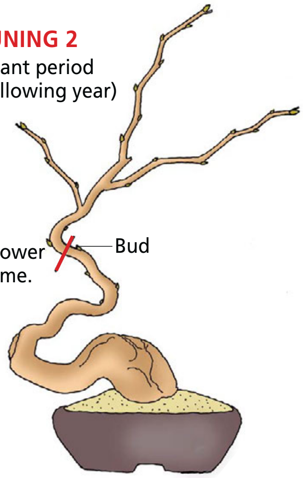

Prune here.
Straight growth is natural.

BRANCH SHAPING (MAIN TRUNK)

Lay it down in a lower position.

PRUNING 2

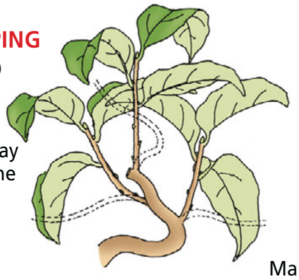
(Dormant period of the following year)


Prune lower this time.
Bud

BRANCH SHAPING

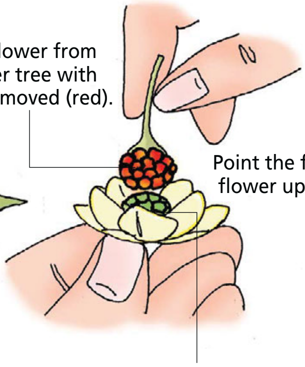
(June or July)

Wire branches to lay down following the dotted lines.

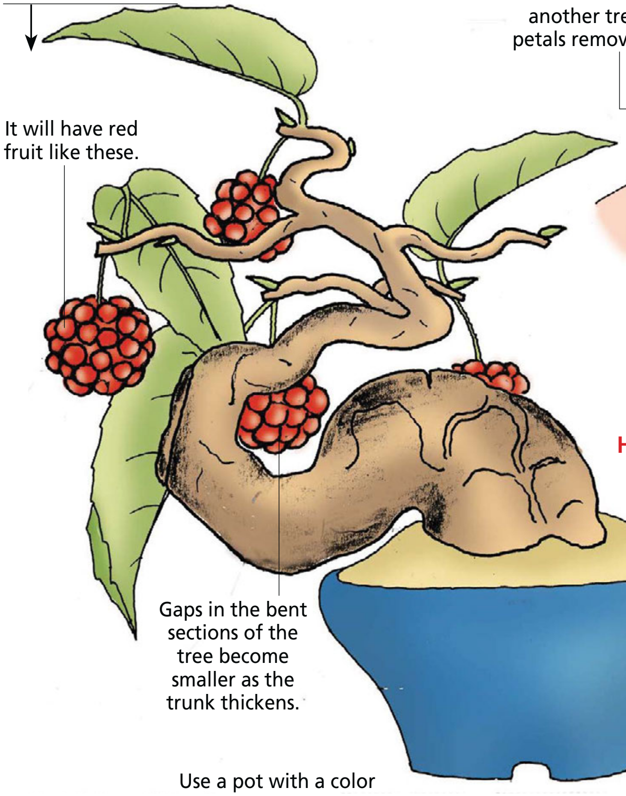


CROSS-POLLINATION GUIDE

(August)


Male flower from another tree with petals removed (red).
Point the female flower upward.
Pistil (green)

HOW BONSAI APPEARS IN THE FUTURE


3⅛ in (8 cm) to the root base
It will have red fruit like these.
Gaps in the bent sections of the tree become smaller as the trunk thickens.

Use a pot with a color that looks attractive with the red fruit (blue or white, etc.).

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling • Cutting						▨	
April		2–3 times / day	Add fertilizer			Growth period	▨	Growth period • Flowering (August)
May					Wiring			
June	Layering • Cutting							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime • Fruiting (October–November)
November	Seedling							
December						Winter		

Japanese Winterberry

JAPANESE NAME
Ume-modoki

ALTERNATIVE NAMES
n/a

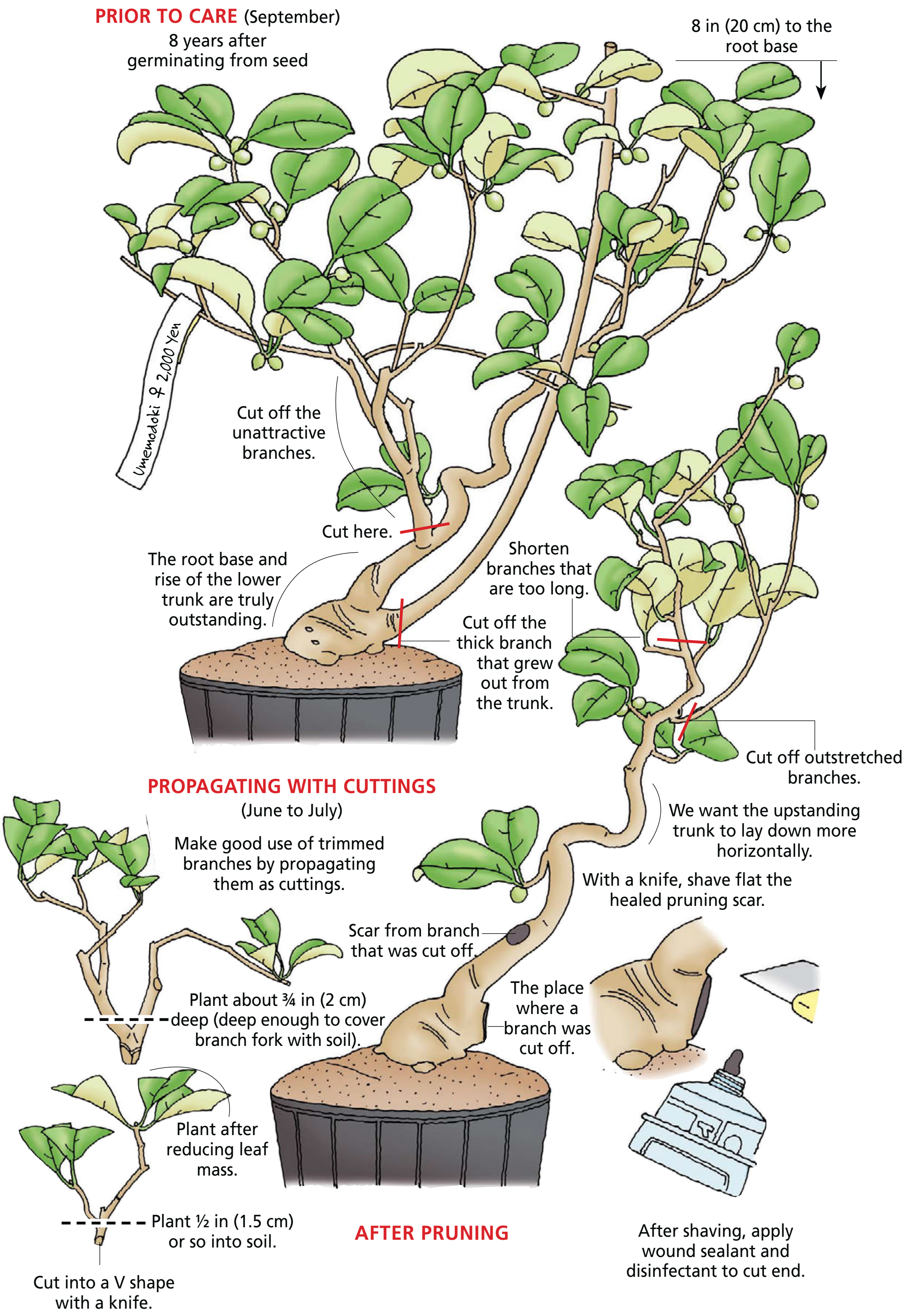
SCIENTIFIC NAME
Ilex serrata

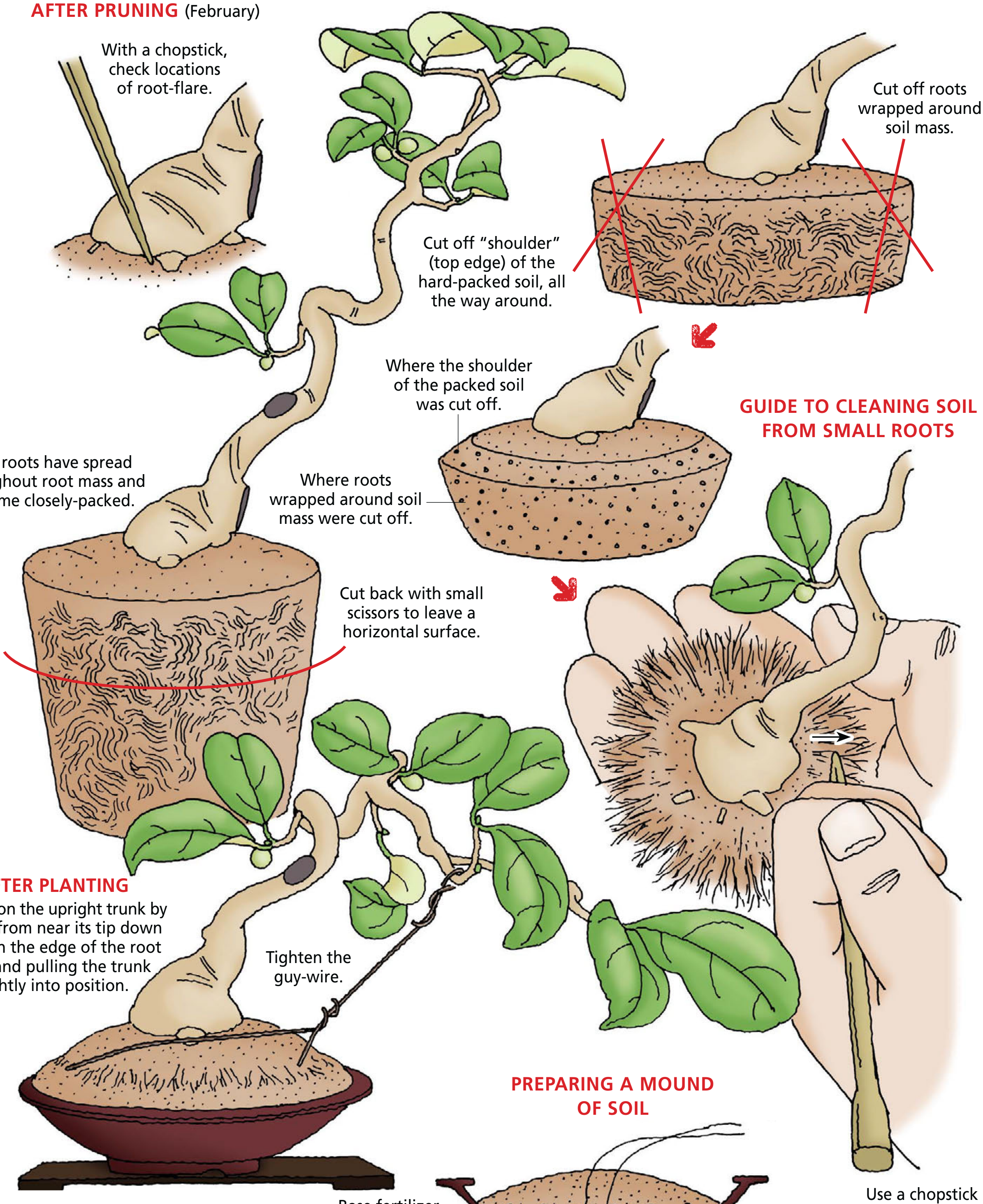
CLASSIFICATION
***Aquifoliaceae* (deciduous broadleaf tree / shrub)**

SYMBOLIC OF
Clarity

BEARING FRUIT
October to November

The source of this tree's Japanese name (meaning "false plum") is that the leaves look similar to plum leaves. Expect flowers from May to June. There are several varieties, with the ¼ to ⅜-in (6 to 8-mm) diameter fruit of the "Dainagon" variety being well known in Japan. It is a species of tree with thin mesophyll (leaf tissue) and demands a great deal of water. As it is dioecious, any difference between male and female seed-grown seedlings cannot be perceived until after the tree has flowered.


PRIOR TO CARE (September)
8 years after germinating from seed
8 in (20 cm) to the root base
Umemodoki ♀ 2,000 Yen
Cut off the unattractive branches.
Cut here.
The root base and rise of the lower trunk are truly outstanding.
Shorten branches that are too long.
Cut off the thick branch that grew out from the trunk.
Cut off outstretched branches.
PROPAGATING WITH CUTTINGS
(June to July)
Make good use of trimmed branches by propagating them as cuttings.
We want the upstanding trunk to lay down more horizontally.
With a knife, shave flat the healed pruning scar.
Scar from branch that was cut off.
Plant about ¾ in (2 cm) deep (deep enough to cover branch fork with soil).
The place where a branch was cut off.
Plant after reducing leaf mass.
Plant ½ in (1.5 cm) or so into soil.
AFTER PRUNING
After shaving, apply wound sealant and disinfectant to cut end.
Cut into a V shape with a knife.



ROOT SHORTENING AFTER PRUNING (February)

With a chopstick, check locations of root-flare.

Thin roots have spread throughout root mass and become closely-packed.

Cut back with small scissors to leave a horizontal surface.

ROOT SHORTENING

Cut off roots wrapped around soil mass.

Cut off “shoulder” (top edge) of the hard-packed soil, all the way around.

Where the shoulder of the packed soil was cut off.

Where roots wrapped around soil mass were cut off.

GUIDE TO CLEANING SOIL FROM SMALL ROOTS

Use a chopstick to dig at the roots and scrape old soil out toward edge.

AFTER PLANTING

Reposition the upright trunk by wiring from near its tip down through the edge of the root base and pulling the trunk tightly into position.

Tighten the guy-wire.

PREPARING A MOUND OF SOIL

Base fertilizer (bone meal or similar) under the soil mix

Soil composition
80% *Akadama* soil
20% *Kiryu* sand

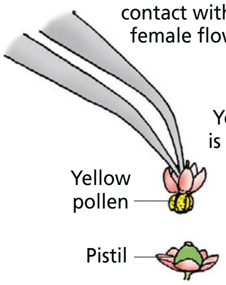
Bamboo charcoal

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Seedling			Layering • Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Wiring							
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (May–June) • Sprout separating (July–August)						Prime • Fruiting (October–November)		

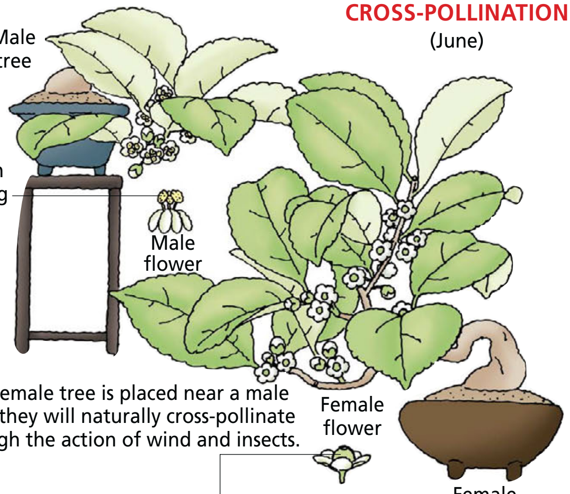
ARTIFICIAL POLLINATION

Holding male flower with tweezers, make contact with the female flower.


Yellow pollen
Pistil

CROSS-POLLINATION

(June)

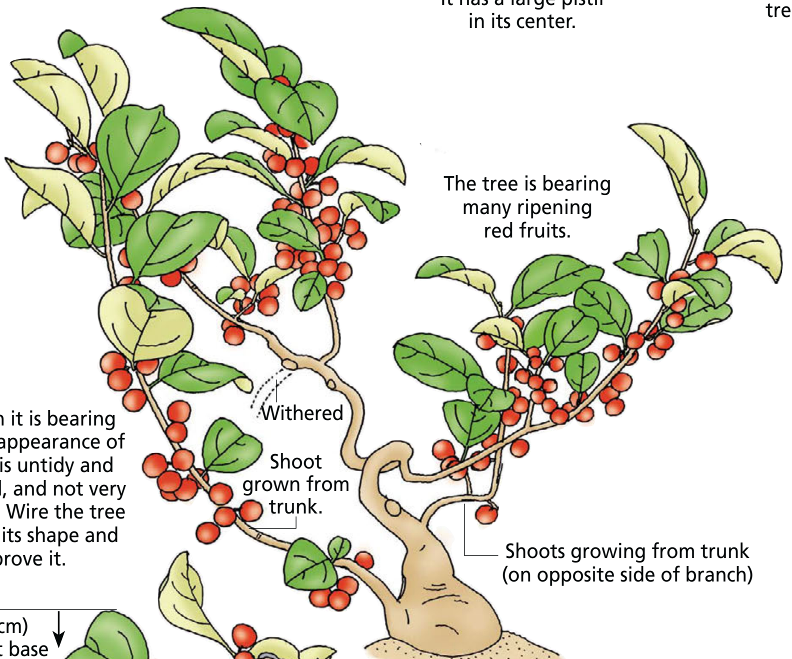

Male tree
Yellow pollen is eye-catching
Male flower
Female flower
Female tree

If a female tree is placed near a male tree, they will naturally cross-pollinate through the action of wind and insects.

It has a large pistil in its center.

HOW THE BONSAI APPEARS AFTER TWO YEARS

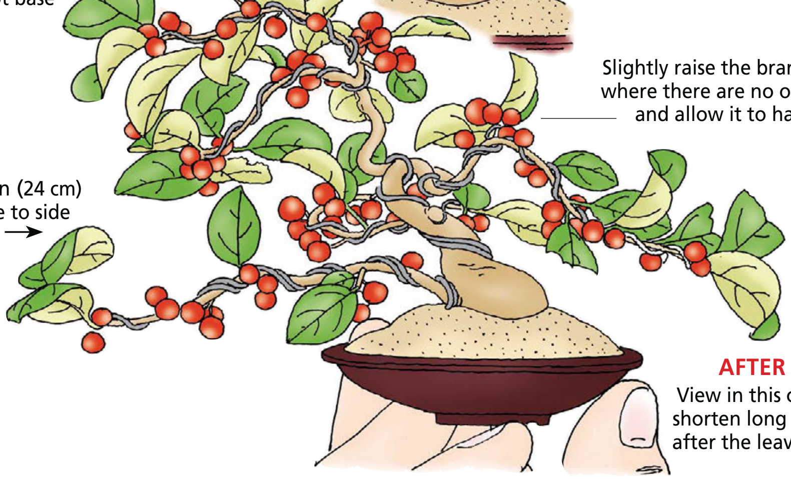
(Late September)


Withered
Shoot grown from trunk.

The tree is bearing many ripening red fruits.

Although it is bearing fruit, the appearance of the tree is untidy and unfocused, and not very attractive. Wire the tree to adjust its shape and improve it.

Shoots growing from trunk (on opposite side of branch)


4 in (10 cm) to the root base
9½ in (24 cm) side to side

Slightly raise the branch to a point where there are no other branches and allow it to hang down.

AFTER WIRING

View in this condition, and shorten long branches by ⅓ after the leaves have fallen.

Burning Bush

JAPANESE NAME
Komayumi

ALTERNATIVE NAMES
n/a

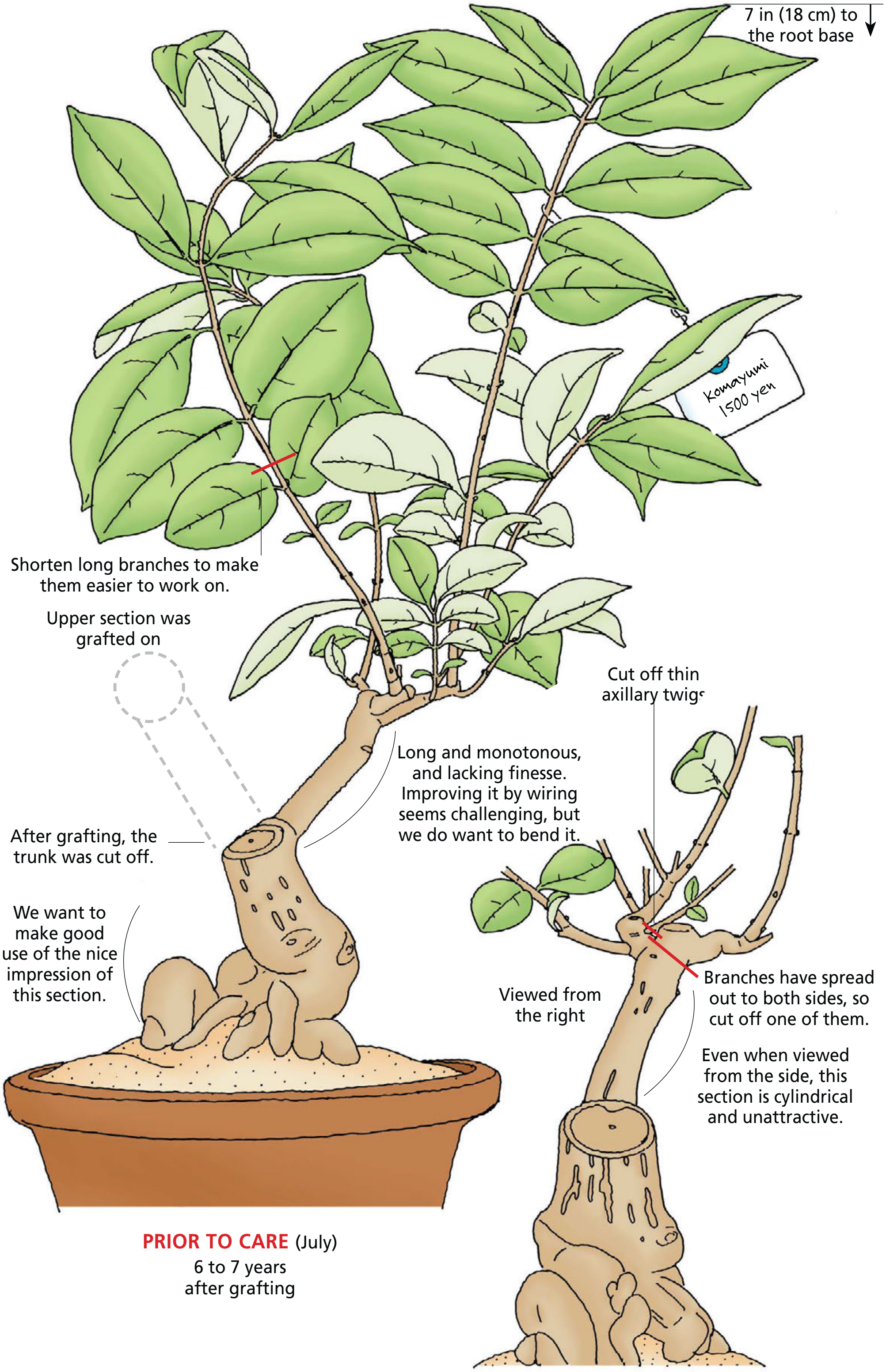
SCIENTIFIC NAME
Euonymus alatus

CLASSIFICATION
***Euonymus* (deciduous broadleaf tree / shrub)**

SYMBOLIC OF
Reluctance to part

BEARING FRUIT
October to November

Pale yellow and green flowers bloom in May and June. The tops of new apical shoots and the axillary shoots close to them bear flower buds. *Komayumi*, the variety of burning bush found in Japan, is a robust species, and handles aggressive pruning well. Its ripening red fruit are beautiful, as well as the changing autumn colors of its leaves. Propagating with cuttings or through air-layering is recommended.



7 in (18 cm) to the root base

Shorten long branches to make them easier to work on.

Upper section was grafted on

After grafting, the trunk was cut off.

We want to make good use of the nice impression of this section.

Long and monotonous, and lacking finesse. Improving it by wiring seems challenging, but we do want to bend it.

Cut off thin axillary twigs

Viewed from the right

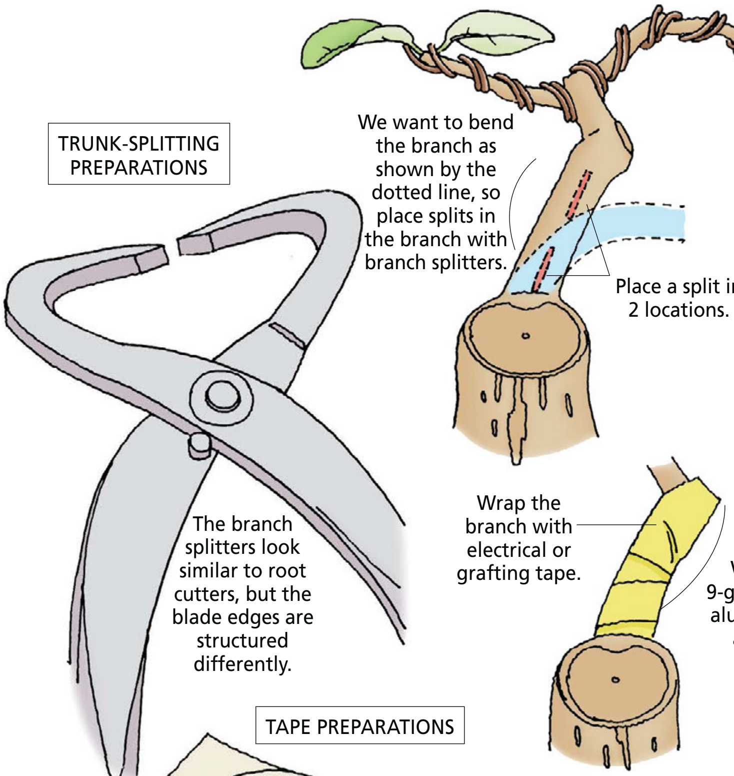
Branches have spread out to both sides, so cut off one of them.

Even when viewed from the side, this section is cylindrical and unattractive.

PRIOR TO CARE (July)
6 to 7 years
after grafting

PRUNING AND WIRING

TRUNK-SPLITTING PREPARATIONS



The branch splitters look similar to root cutters, but the blade edges are structured differently.

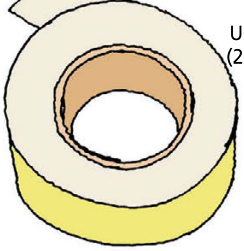
We want to bend the branch as shown by the dotted line, so place splits in the branch with branch splitters.

Place a split in 2 locations.

Wrap the branch with electrical or grafting tape.

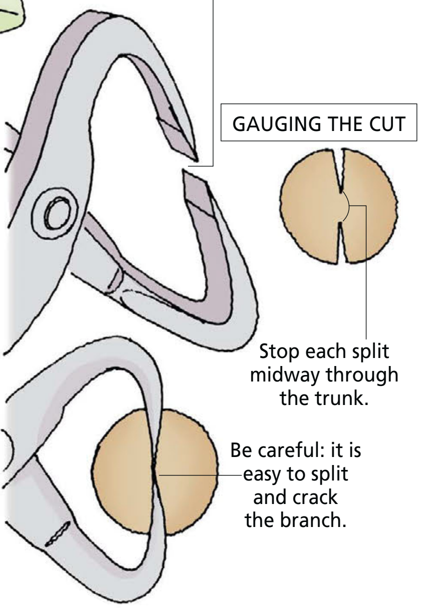
Wrap with 9-gauge (3-mm) aluminum wire and bend.

TAPE PREPARATIONS



Using ¾-in (2-cm) tape is easy

GAUGING THE CUT

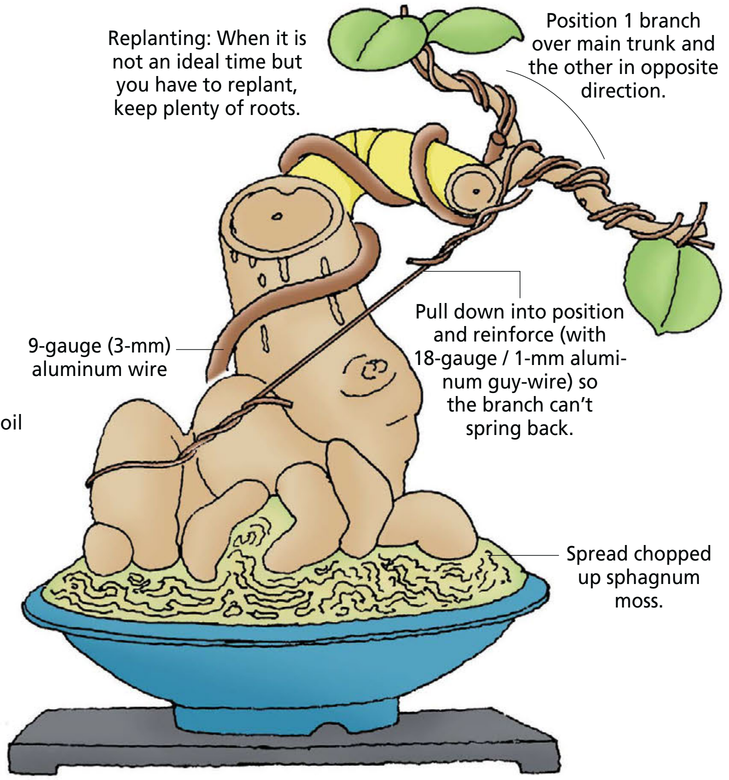


Cut into the branch until just before the blades of the branch splitters meet.

Stop each split midway through the trunk.

Be careful: it is easy to split and crack the branch.

JUST-COMPLETED TEMPORARY PLANTING



Replanting: When it is not an ideal time but you have to replant, keep plenty of roots.

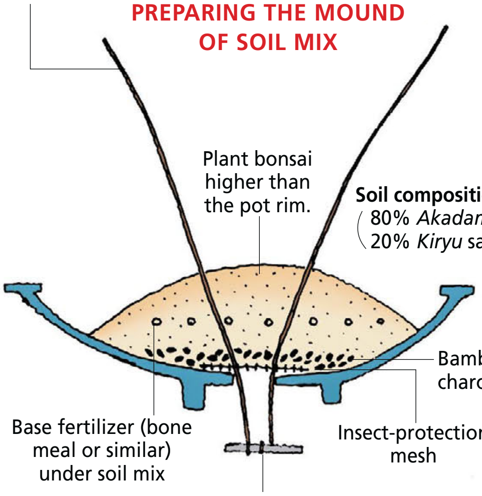
Position 1 branch over main trunk and the other in opposite direction.

9-gauge (3-mm) aluminum wire

Pull down into position and reinforce (with 18-gauge / 1-mm aluminum guy-wire) so the branch can't spring back.

Spread chopped up sphagnum moss.

PREPARING THE MOUND OF SOIL MIX



18-gauge (1-mm) aluminum wire to secure the roots

Plant bonsai higher than the pot rim.

Soil composition
80% *Akadama* soil
20% *Kiryu* sand

Bamboo charcoal

Insect-protection mesh

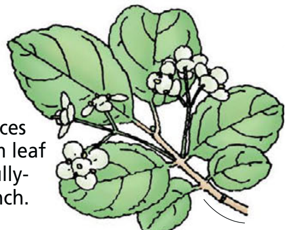
Base fertilizer (bone meal or similar) under soil mix

Wrap around a piece of thick aluminum wire one or two times.

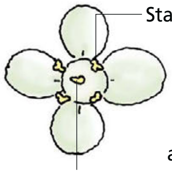
FLOWERING

(May)

FLOWERING GUIDE

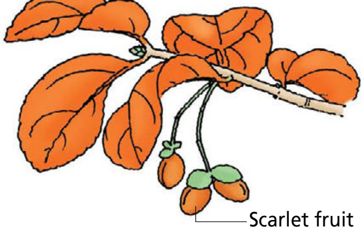

Inflorescences growing from leaf axils of a fully-grown branch.
Twig from the previous year

FLOWER SHAPE

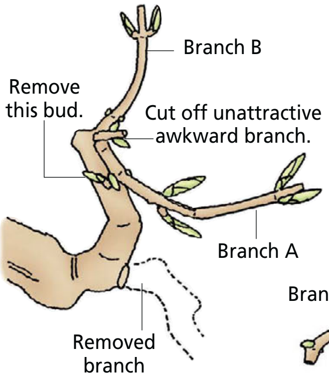

Stamen
¼-in (6 to 7-mm) pale green flowers
Pistil

FRUIT

(October)


Stunning autumn leaves
Scarlet fruit

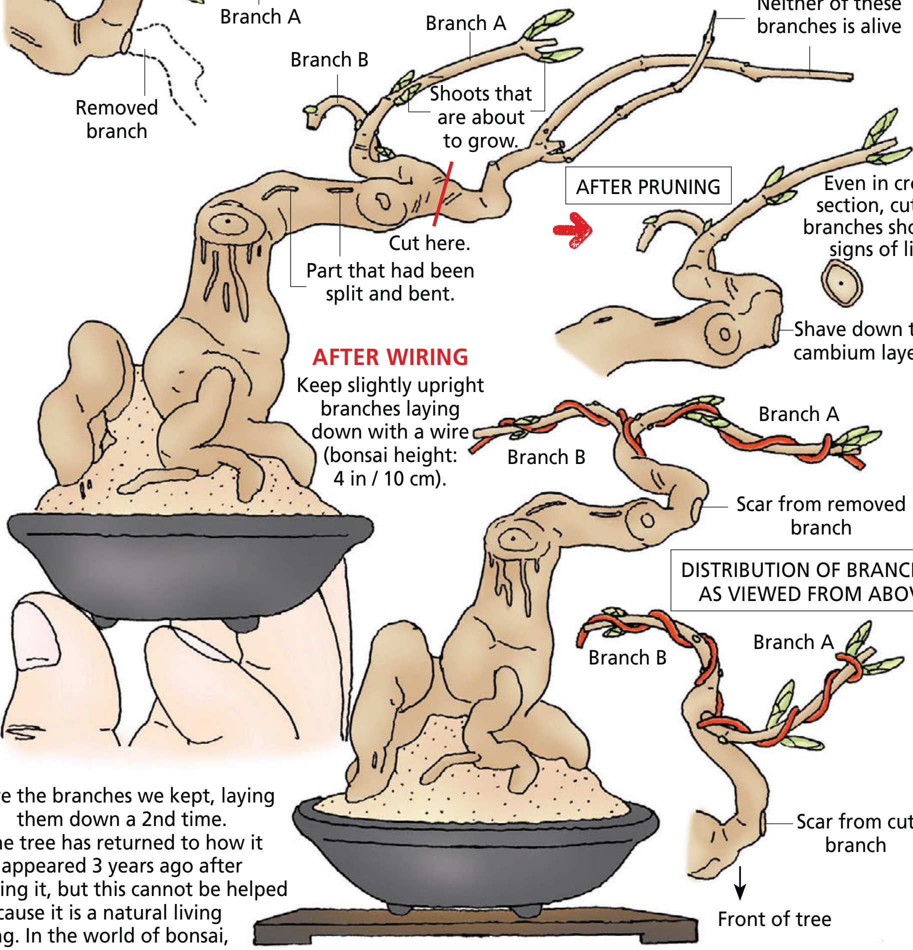
BRANCHES, AS VIEWED FROM ABOVE


Branch B
Remove this bud.
Cut off unattractive awkward branch.
Branch A
Removed branch

HOW THE BONSAI APPEARS AFTER THREE YEARS

(Mid-April)

A bent tree with a thick branch that was cut short. The wounds healed in about a year, and when it was time to shape the branches, an accident occurred to one of them.


Branch A
Neither of these branches is alive
Branch B
Shoots that are about to grow.
Cut here.
Part that had been split and bent.
AFTER PRUNING
Even in cross-section, cut-off branches show no signs of life.
Shave down to cambium layer.
Branch A
Branch B
Scar from removed branch
DISTRIBUTION OF BRANCHES, AS VIEWED FROM ABOVE
Branch B
Branch A
Scar from cut branch
Front of tree

AFTER WIRING

Keep slightly upright branches laying down with a wire (bonsai height: 4 in / 10 cm).

Wire the branches we kept, laying them down a 2nd time. The tree has returned to how it appeared 3 years ago after treating it, but this cannot be helped because it is a natural living thing. In the world of bonsai, we repeat these kinds of projects many times over the years.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating		Grafting	Cutting • Seedling			Layering • Cutting						
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning				Wiring						
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period • Flowering (May–June) • Sprout separating (July–August)						Prime • Fruiting (October–November)		

Toringo Crabapple

JAPANESE NAME
Zumi

ALTERNATIVE NAMES
Mitsubakaido, koringo

SCIENTIFIC NAME
Malus toringo

CLASSIFICATION
Rose family (broadleaf tree / under 33 feet / 10 m)

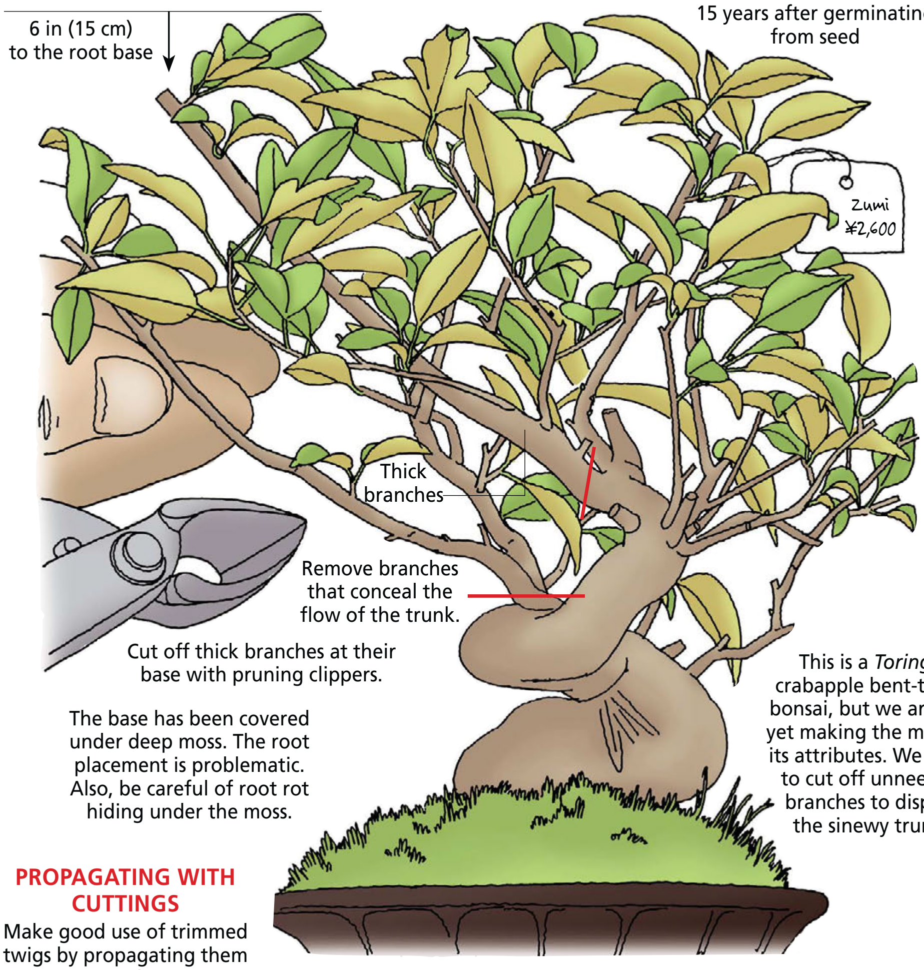
SYMBOLIC OF
n/a

BEARING FRUIT
October to November

In may and June, white flowers bloom on this tree's branch tips. There are even occasional light pink flowers. Its Japanese name comes from the Japanese word for a dye (*shimi*), owing to the use of its bark for yellow dyes. A strong sturdy tree, it has alternating leaves (not pairs). Its fruit is spherical and red when ripe. The *ki-mizumi* variety has yellow fruit. Propagating with either cuttings or root cuttings is recommended.

PRIOR TO CARE (May)

15 years after germinating from seed


6 in (15 cm) to the root base
Zumi
¥2,600
Thick branches

Remove branches that conceal the flow of the trunk.

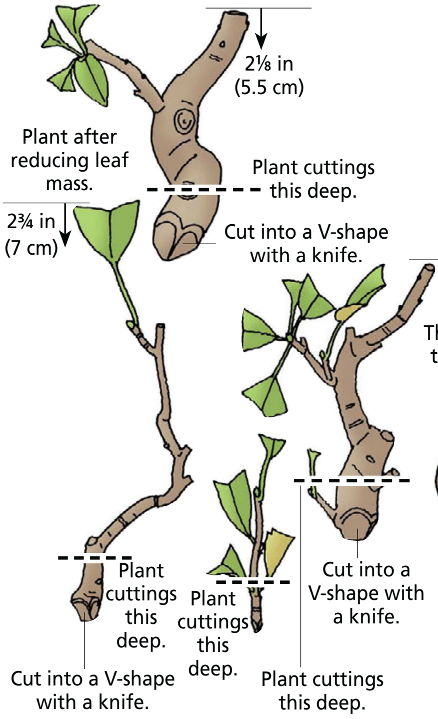
Cut off thick branches at their base with pruning clippers.

The base has been covered under deep moss. The root placement is problematic. Also, be careful of root rot hiding under the moss.

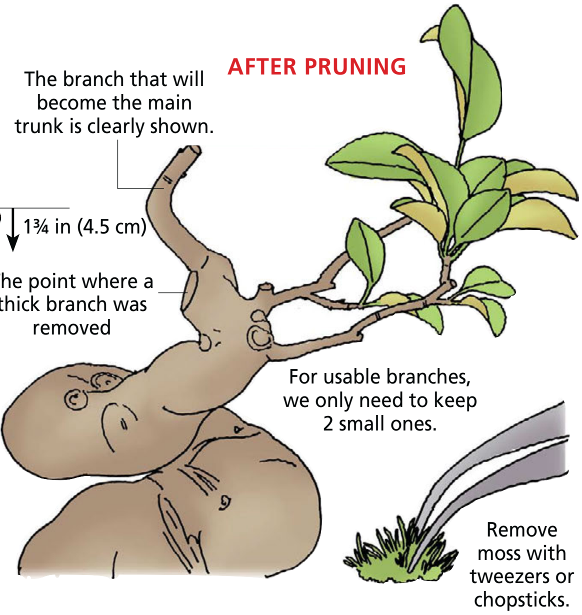
This is a *Toringo* crabapple bent-trunk bonsai, but we are not yet making the most of its attributes. We want to cut off unneeded branches to display the sinewy trunk.

PROPAGATING WITH CUTTINGS

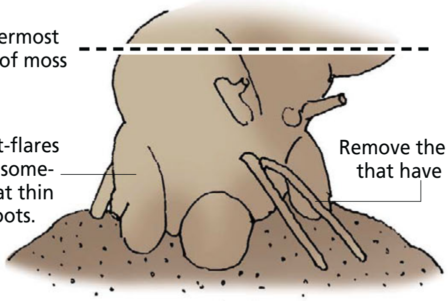
Make good use of trimmed twigs by propagating them as cuttings


2⅛ in (5.5 cm)
Plant after reducing leaf mass.
Plant cuttings this deep.
Cut into a V-shape with a knife.
2¾ in (7 cm)
Plant cuttings this deep.
Plant cuttings this deep.
Cut into a V-shape with a knife.
Cut into a V-shape with a knife.
Plant cuttings this deep.

AFTER PRUNING


The branch that will become the main trunk is clearly shown.
1¾ in (4.5 cm)
The point where a thick branch was removed
For usable branches, we only need to keep 2 small ones.
Remove moss with tweezers or chopsticks.

CHECKING ROOT-FLARE



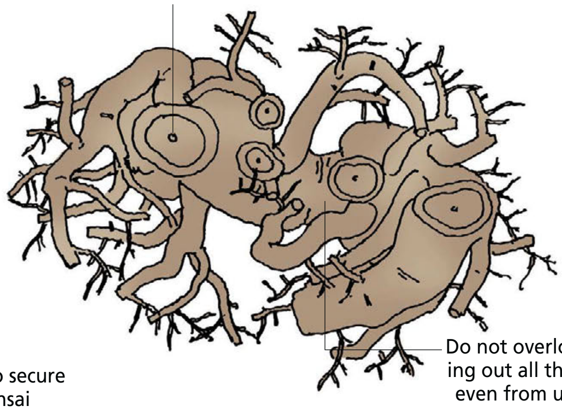
Uppermost level of moss

Root-flares are somewhat thin roots.

Remove the upper roots that have appeared.

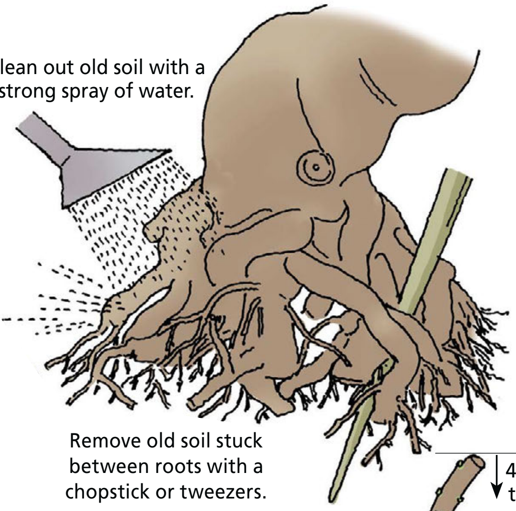
Loosening the old hard-packed soil is challenging—particularly the old soil under the root base of your tree. Clean it all out.

ROOTS VIEWED FROM BOTTOM



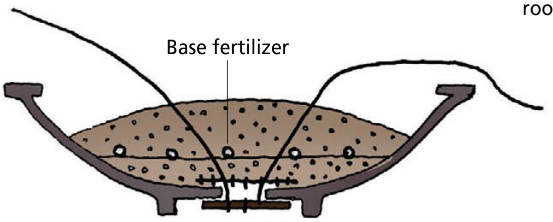
The scar left where a thick root had been cut off.

Do not overlook cleaning out all the old soil, even from under the root base.



Clean out old soil with a strong spray of water.

Remove old soil stuck between roots with a chopstick or tweezers.

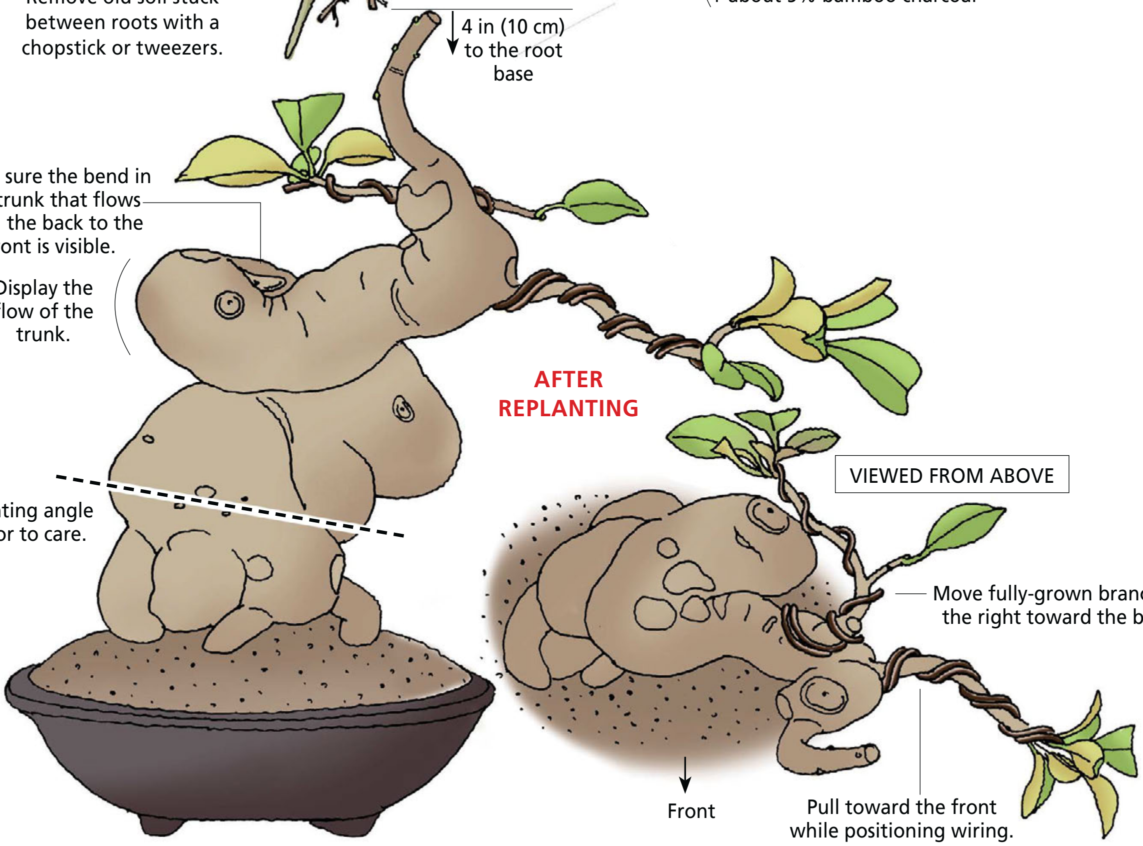


Wire to secure bonsai

Base fertilizer

Soil composition
80% *Akadama* soil
($^1/_{32}$ to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand
($^1/_{32}$ to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

AFTER REPLANTING



4 in (10 cm) to the root base

Make sure the bend in the trunk that flows from the back to the front is visible.

Display the flow of the trunk.

Planting angle prior to care.

VIEWED FROM ABOVE

Move fully-grown branch on the right toward the back.

Front

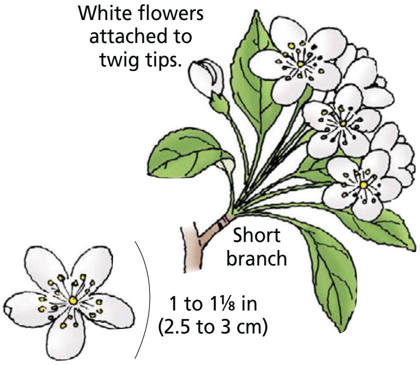
Pull toward the front while positioning wiring.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times / week		Protection room				Dormancy period
February	Grafting				Pruning	Winter		
March	Roots insertion							
April		2–3 times / day	Add fertilizer					Growth period • Flowering (May–June) • Sprout separating (July–August)
May					Wiring	Growth period		
June	Layering • Cutting							
July		3–4 times / day	Water & fertilizer	Shading				
August								
September		2–3 times / day	Add fertilizer					
October								Prime •Fruiting (October–November)
November								
December						Winter		

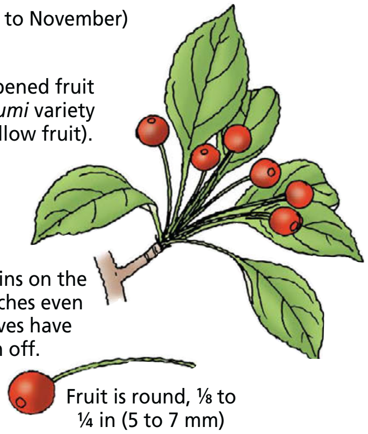
FLOWERING

(May to June)


White flowers attached to twig tips.
Short branch
1 to 1⅛ in (2.5 to 3 cm)

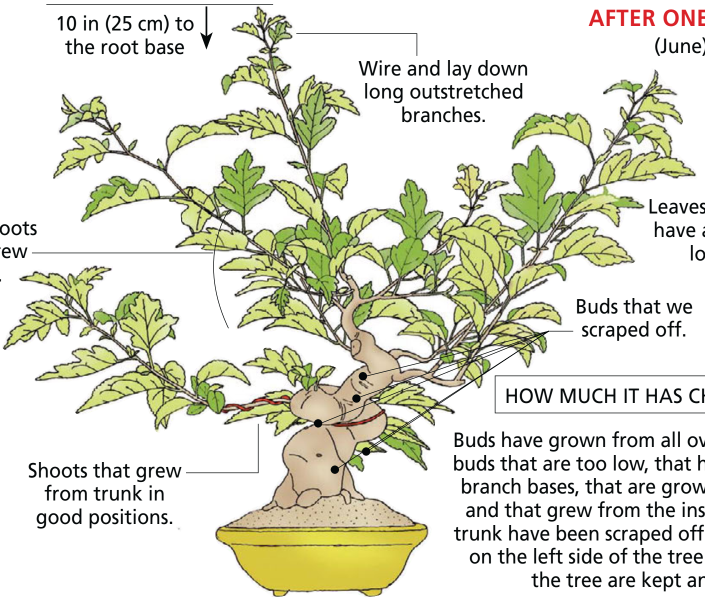
FRUIT

(October to November)


Red ripened fruit (*kimizumi* variety has yellow fruit).
Fruit remains on the long branches even after leaves have fallen off.
Fruit is round, ⅛ to ¼ in (5 to 7 mm)

HOW THE BONSAI APPEARS AFTER ONE YEAR

(June)

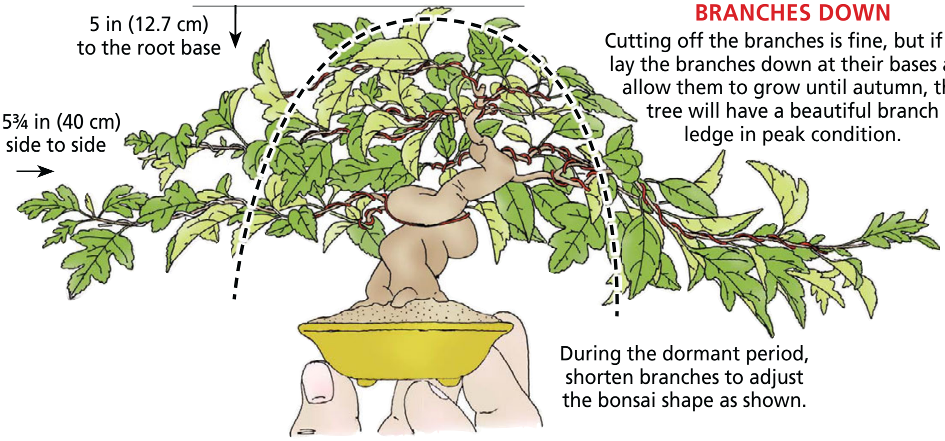

10 in (25 cm) to the root base
Wire and lay down long outstretched branches.
Leaves with 3 to 5 lobes have also appeared on long branches.
Make use of shoots on top that grew from trunk.
Buds that we scraped off.
Shoots that grew from trunk in good positions.

HOW MUCH IT HAS CHANGED SO FAR

Buds have grown from all over the trunk but buds that are too low, that have grown from branch bases, that are growing downward, and that grew from the inside of the bent trunk have been scraped off. Buds that grew on the left side of the tree and higher up the tree are kept and used.

LONG BRANCHES AFTER LAYING BRANCHES DOWN

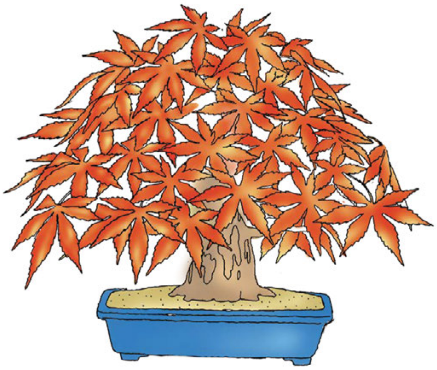
Cutting off the branches is fine, but if you lay the branches down at their bases and allow them to grow until autumn, the tree will have a beautiful branch ledge in peak condition.

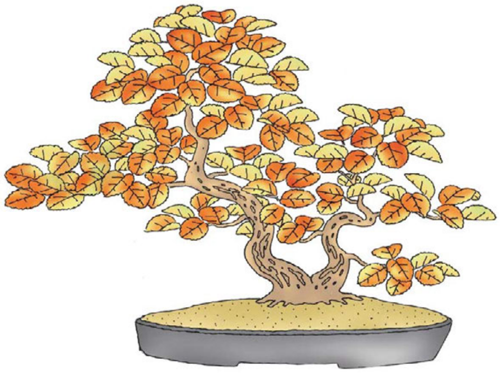

5 in (12.7 cm) to the root base
15¾ in (40 cm) side to side
During the dormant period, shorten branches to adjust the bonsai shape as shown.

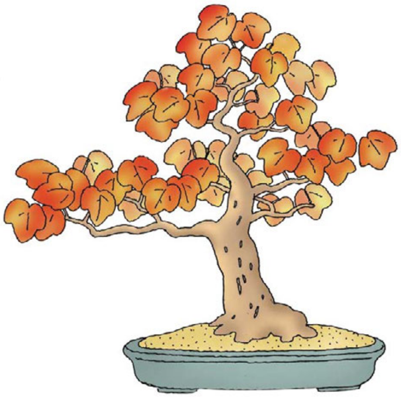
A POPULAR TYPE OF BONSAI WITH DELIGHTFUL SEASONALLY-CHANGING LEAVES

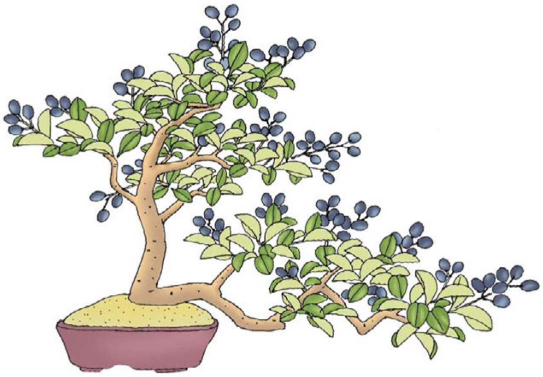
How to Care for Leafy Bonsai

The highlights of this type are the shapes and colors of leaves, the colors of trunks and the balanced colors of leaves and the pot—all varying depending on species. Not to be forgotten is their most splendid transformation—the changing colors of autumn leaves.









ADMIRE THE FOUR SEASONS THROUGH ITS CHANGING LEAVES

Species of bonsai with leaves that change color and fall in the autumn are known as "leafy bonsai."
The cycle starts with the appearance of spring buds. Before long the season of bright green arrives, followed by the lush rampant growth of summer leaves. In the end, we welcome the season of autumn colors.

And then, after the leaves have fallen, the shape of the winter tree appears—also a highlight—though comprised of only the trunk and branches.

In Japan, bonsai trees that have become bare after all their leaves have fallen are known as "cold trees" (refer to footnote on page 137).

Trees that display their fine branches and trunk patterns clearly are considered to be ideal for viewing. Leafy bonsai that clearly show the changes of the seasons can be said to be traditional Japanese bonsai.

Trident Maple

JAPANESE NAME
Kaede

ALTERNATIVE NAME
Toukaede

SCIENTIFIC NAME
Acer buergeranium

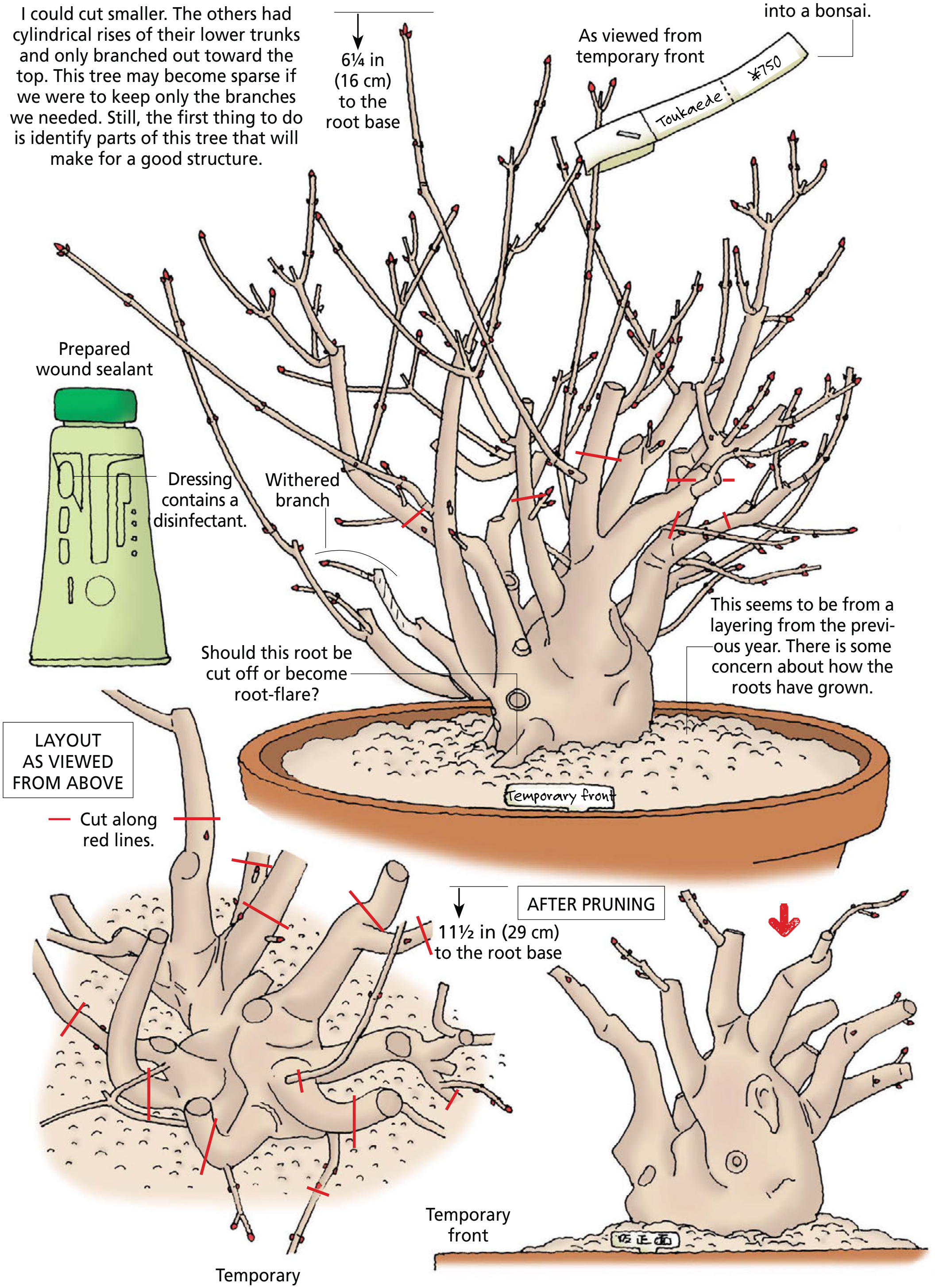
CLASSIFICATION
Maple family (broadleaf tree / under 33 feet / 10 m)

SYMBOLIC OF
Love, Bountiful harvest

PEAK COLOR
November

In the world of bonsai, when one generally refers to maple, more often than not the Trident maple is the tree actually being discussed. This is a dioecious tree native to China. Its leaves and branches grow in opposing pairs, and leaves normally have three lobes toward the top. The tops of the leaves are glossy and both sides are smooth. Three primary veins* emerge from the bottom of the leaf. This is a sturdy species of tree, and propagating with cuttings is easy.

This was the only tree in the bonsai area of my local gardening center that seemed suitable as raw material that I could cut smaller. The others had cylindrical rises of their lower trunks and only branched out toward the top. This tree may become sparse if we were to keep only the branches we needed. Still, the first thing to do is identify parts of this tree that will make for a good structure.



Reasonably priced (US$6.85) as a raw material to adapt into a bonsai.

This seems to be from a layering from the previous year. There is some concern about how the roots have grown.

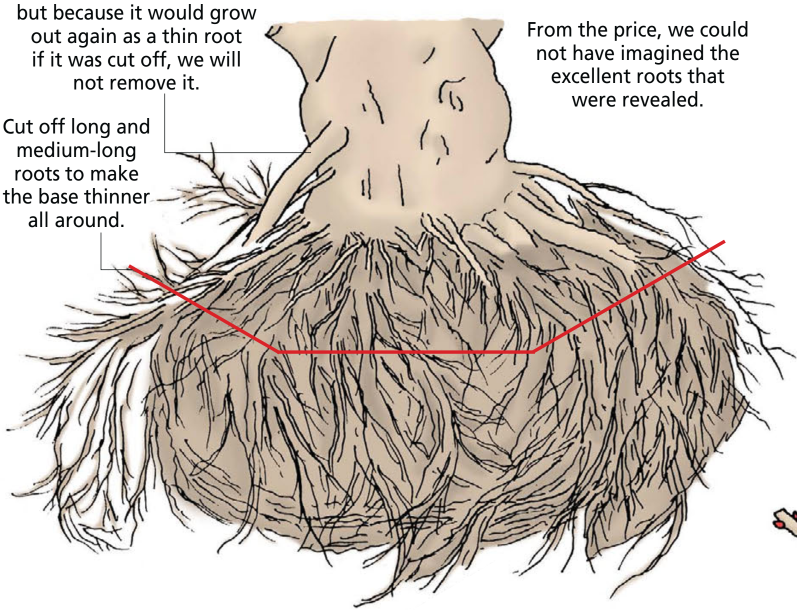
Should this root be cut off or become root-flare?

Dressing contains a disinfectant.

PRIOR TO CARE (March)
3 to 4 years after air-layering
6¼ in (16 cm) to the root base
As viewed from temporary front
Toukaede ¥750
Prepared wound sealant
Withered branch
Temporary front
LAYOUT AS VIEWED FROM ABOVE
Cut along red lines.
AFTER PRUNING
11½ in (29 cm) to the root base
Temporary front
仮正面
Temporary front

Primary vein: The vascular tissue of the stem connects to the leaves, so nutrients and water pass through this vein, which also plays a role in passing sugars produced through carbon fixation by the leaves back toward the stem. It also serves as the structural framework of the leaf, helping it keep its shape. In coniferous trees, there is only one in the center of each needle, but in broadleaf trees, there are many branching veins. Of these, the large vein in the center is called the "midrib." Refer to page 191.

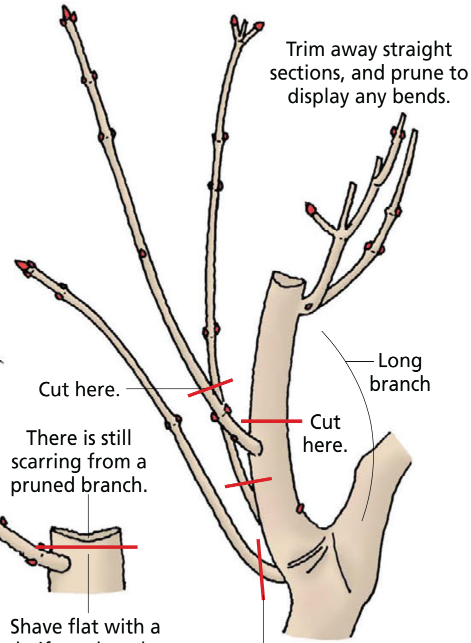
THE APPEARANCE OF THE ROOTS


This root is badly-placed on the rise of the lower trunk, but because it would grow out again as a thin root if it was cut off, we will not remove it.

Cut off long and medium-long roots to make the base thinner all around.

From the price, we could not have imagined the excellent roots that were revealed.

TRIMMING GUIDE


Trim away straight sections, and prune to display any bends.

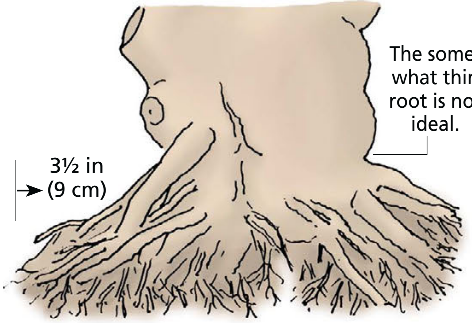
Long branch
Cut here.
Cut here.

There is still scarring from a pruned branch.

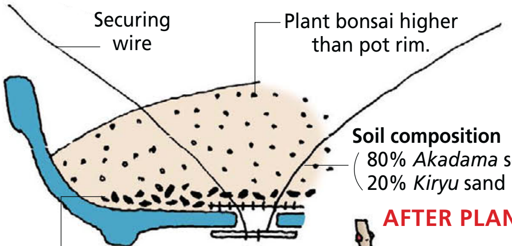
Shave flat with a knife and apply wound sealant.

Cut off branches that grew from the branch base.

AFTER ROOT SHORTENING



The somewhat thin root is not ideal.



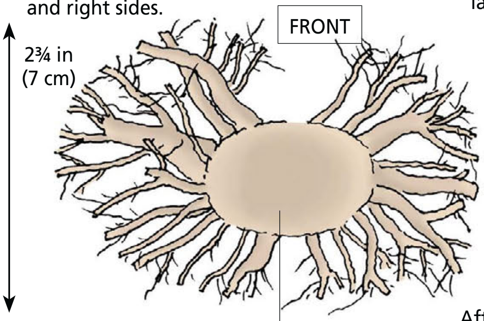
Plant bonsai higher than pot rim.

Soil composition
80% *Akadama* soil
20% *Kiryu* sand

Arrange a sparse layer of gravel over bottom of pot.

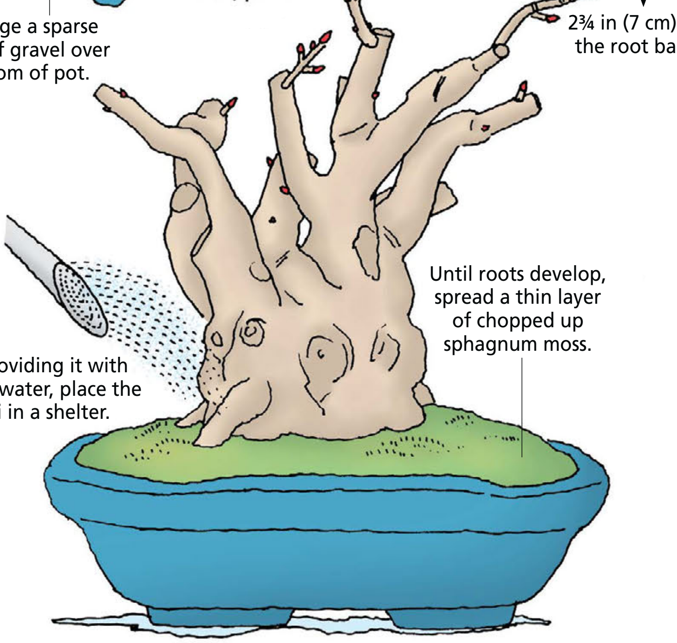
Shorten roots front and back, and shorten them slightly less on the left and right sides.

BOTTOM VIEW OF THE ROOTS



Judging from how it had been cut level, we can glean that it was detached as an air-layering.

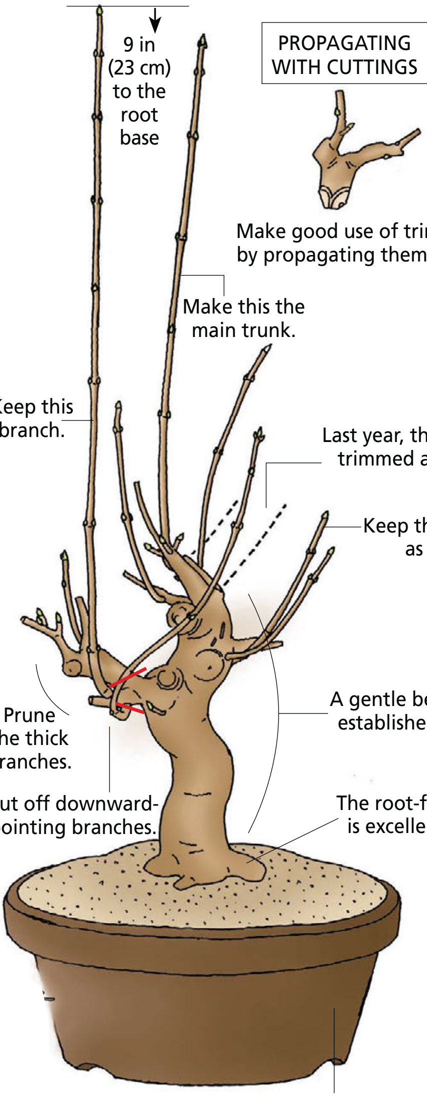
AFTER PLANTING


2¾ in (7 cm) to the root base

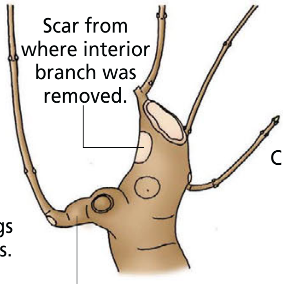
After providing it with plenty of water, place the bonsai in a shelter.

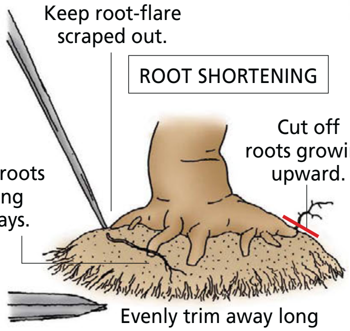
Until roots develop, spread a thin layer of chopped up sphagnum moss.

Pruning and replanting


PRIOR TO CARE (March)
5 to 6 years after grafting
9 in (23 cm) to the root base
PROPAGATING WITH CUTTINGS
Make good use of trimmed twigs by propagating them as cuttings.
Make this the main trunk.
Keep this branch.
Last year, the trunk was trimmed away here.
Keep this branch as well.
Prune the thick branches.
A gentle bend was established here.
Cut off downward-pointing branches.
The root-flare is excellent.
No. 3.5 unglazed terracotta pot

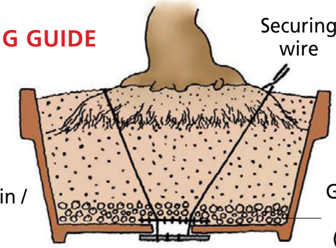
In the previous year, the tree was shortened to a small trunk, and it currently has shoots growing from the branches that were kept and reshaped. The branches must be pruned this year.

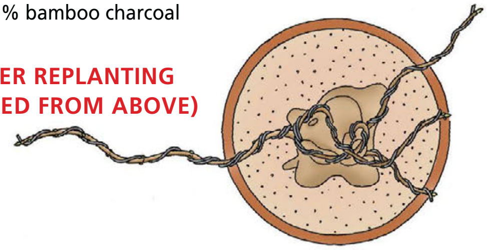

AFTER PRUNING
Scar from where interior branch was removed.
Place where a thick branch was cut off.

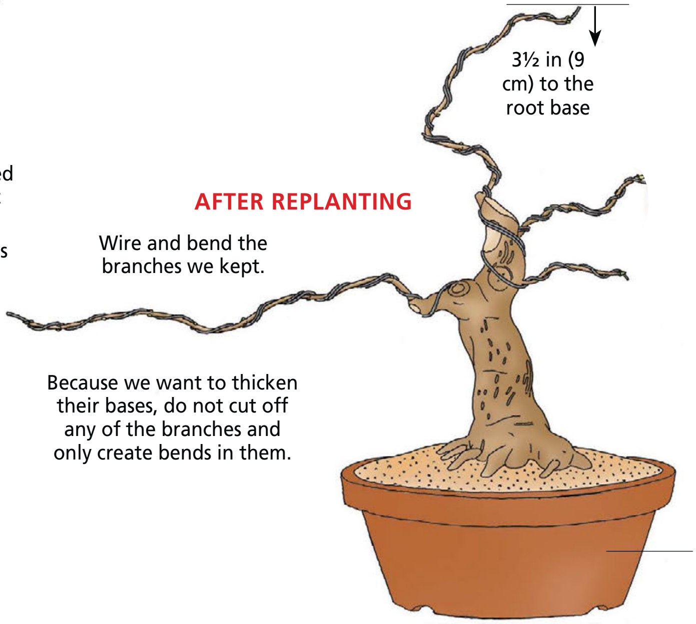

ROOT SHORTENING
Keep root-flare scraped out.
Cut off roots running sideways.
Cut off roots growing upward.
Evenly trim away long downward-pointing roots.

Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal


PLANTING GUIDE
Securing wire
Gravel bed ⅛ to ¼-in (4 to 6-mm) grains.

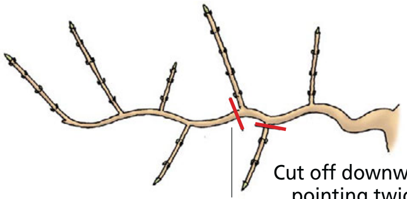

AFTER REPLANTING (VIEWED FROM ABOVE)


THE FRONT
3½ in (9 cm) to the root base
AFTER REPLANTING
Wire and bend the branches we kept.
No. 3.5 unglazed terracotta pot

Because we want to thicken their bases, do not cut off any of the branches and only create bends in them.

BRANCH SHAPING AND DEBRANCHING

(Dormant period)

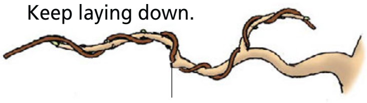


Debranch here.

Cut off downward-pointing twigs.

WIRING

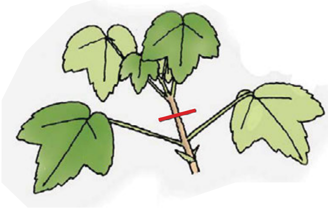
Keep laying down.



This is the section that was debranched.

PINCHING OFF BUDS

(April to May)

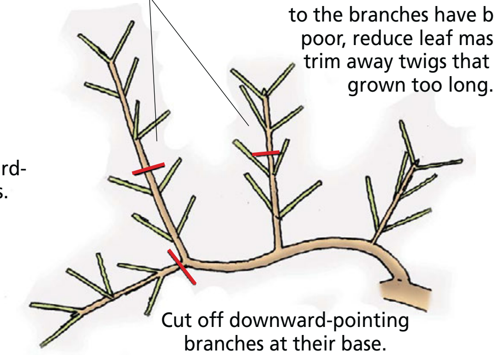


Once 3 nodes have grown, pinch off 2 of them and keep 1.

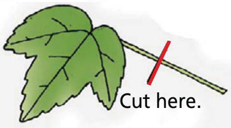
LEAF TRIMMING AND PRUNING

Trim away branches where they are growing too vigorously.

Because airflow and sunlight to the branches have become poor, reduce leaf mass and trim away twigs that have grown too long.



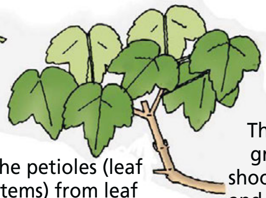
Cut off downward-pointing branches at their base.



Cut here.

(June)

(August)

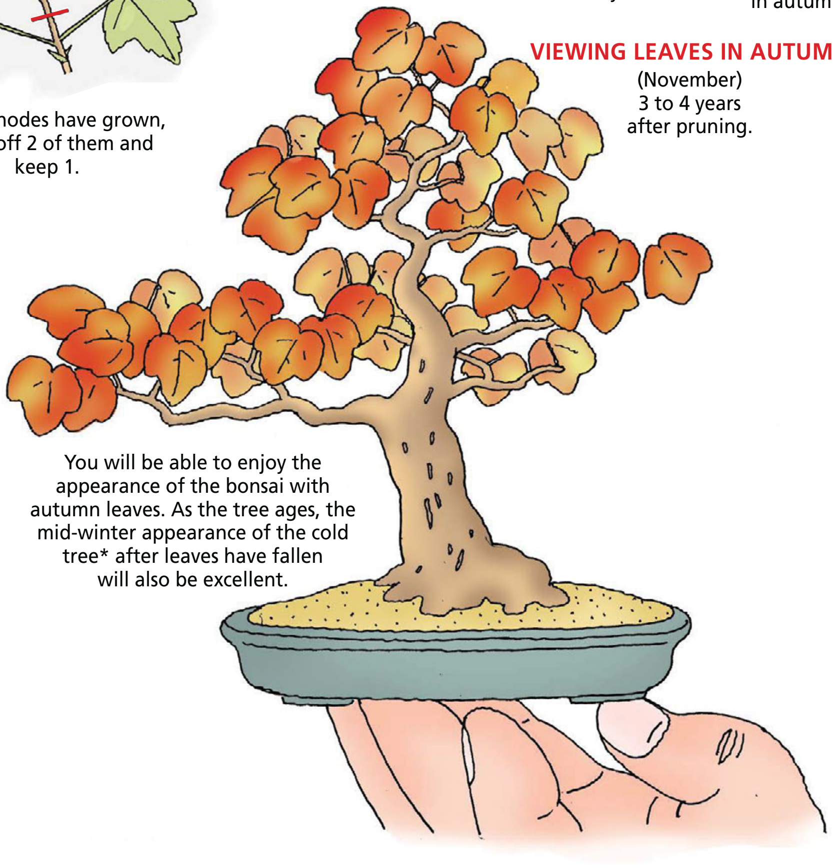


The petioles (leaf stems) from leaf trimming fall off naturally.

The 2nd growth shoots grow and become mature in autumn.

VIEWING LEAVES IN AUTUMN

(November)
3 to 4 years after pruning.



You will be able to enjoy the appearance of the bonsai with autumn leaves. As the tree ages, the mid-winter appearance of the cold tree* after leaves have fallen will also be excellent.

---

*Cold tree: Refers to how a deciduous tree appears in winter after its leaves have fallen—a bonsai formed of only branches. Japanese zelkova, trident maple, Japanese maple and so on are good example species. Because they have no leaves in the winter, we can hold the bonsai in our hands and its trunk patterns and fine branch details become clear, and this season is considered to be the most suitable to enjoy the shape of the tree itself.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting			Layering • Cutting						
Watering	1–2 times/week			2–3 times/day			3–4 times/day		2–3 times/day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning		Bud picking		Wiring • Leaf cutting (June)						
Sterilization		Winter		Growth period								Winter
Transplanting												
Growth State	Dormancy period			Growth period • Budding (April)						Prime • Autumn leaves (November)		

Japanese Maple

JAPANESE NAME
Momiji

ALTERNATIVE NAMES
Red emperor maple, Smooth Japanese maple

SCIENTIFIC NAME
Acer palmatum

CLASSIFICATION
Maple (deciduous hardwood / macrophanerophyte)

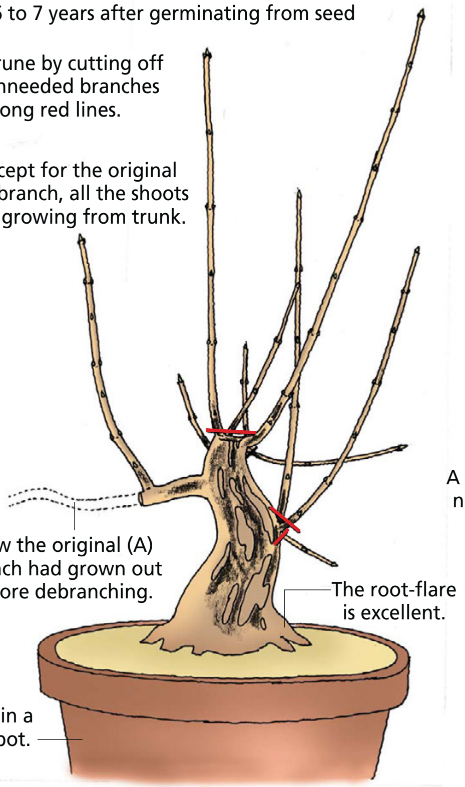
SYMBOLIC OF
Cautious restraint

PEAK COLOR
November and December

The flowers of the *momiji** bloom even in the spring. To truly enjoy the changing autumn colors of the Japanese maple, pinching off buds, trimming leaves, pruning and wiring must be done in the appropriate seasons. *Momiji* prefers half-days of shade and some moisture, and in the summer, being in direct sunlight can cause leaf burn, so pay attention to its needs for water and shade. Propagation is by air-layering, or with seed-grown seedlings or cuttings.

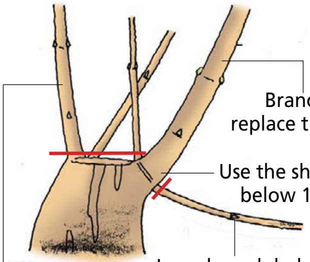
CURRENT SHAPE IS OVERGROWN AND WEAKENED (March)

6 to 7 years after germinating from seed



Prune by cutting off unneeded branches along red lines.
Except for the original (A) branch, all the shoots are growing from trunk.
How the original (A) branch had grown out before debranching.
The root-flare is excellent.
Cultivate in a training pot.

IMPORTANT POINTS ABOUT PRUNING



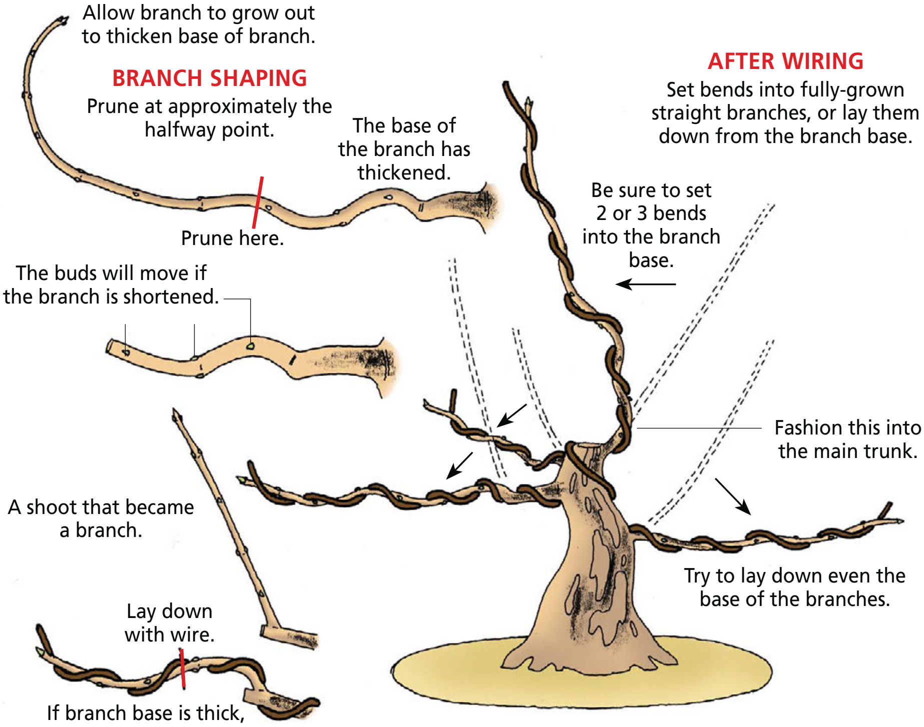
Branch that will replace the main trunk.
Use the short branch below 1st node.
Long branch below 1st node
A short branch below the 1st node, but difficult to use as it is standing so straight.

BRANCH SHAPING

Prune at approximately the halfway point.

AFTER WIRING

Set bends into fully-grown straight branches, or lay them down from the branch base.



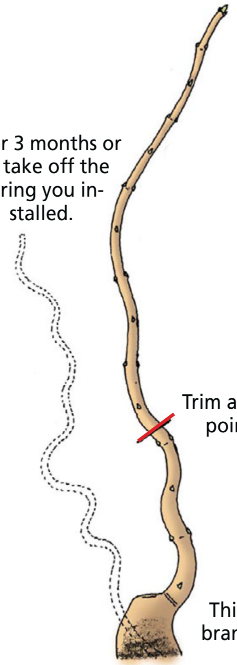
Allow branch to grow out to thicken base of branch.
The base of the branch has thickened.
Prune here.
The buds will move if the branch is shortened.
A shoot that became a branch.
Lay down with wire.
If branch base is thick, trim away to here.
Be sure to set 2 or 3 bends into the branch base.
Fashion this into the main trunk.
Try to lay down even the base of the branches.

---

*Momiji: *In the horticultural world, among the trees that have been classified into the* Aceraceae *family, mountain maple* (Acer spicatum)*, Japanese maple* (Acer palmatum) *and so on have notched leaf shapes, with those that have particularly deep notches being known as* momiji.

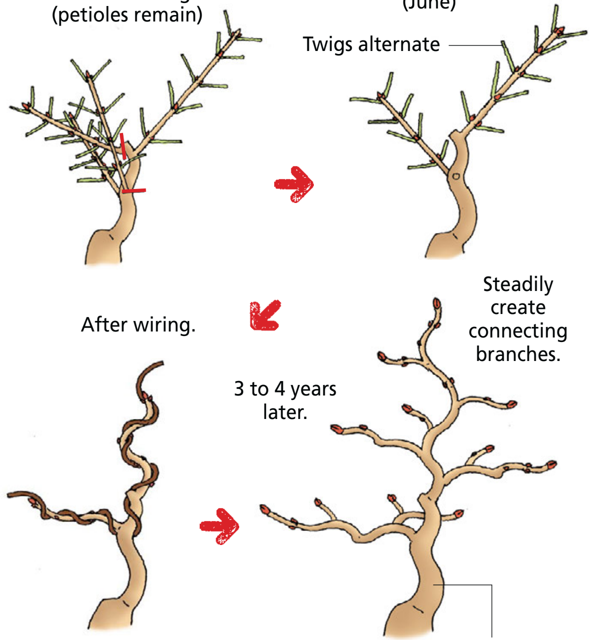
REPLACING THE MAIN TRUNK*

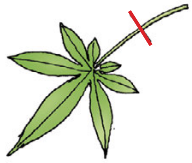
Allow main branch to grow so its base becomes thicker, and then shorten it.


After 3 months or so, take off the wiring you installed.
Trim at this point.
Thickened branch base

BRANCH SHAPING, LEAF TRIMMING, & PRUNING

(June)


Leaf trimming (petioles remain)
Twigs alternate
After wiring.
Steadily create connecting branches.
3 to 4 years later.
The base of the main trunk has thickened, and the taper has improved.

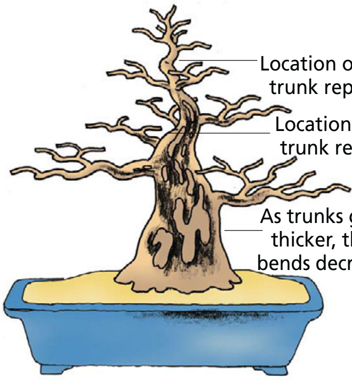


Cut off 1 of each set of opposing leaves to make them alternating leaves. Refer to page 191, "Names of Leaf Parts and How They are Attached."

HOW THE BONSAI APPEARS IN THE FUTURE (March)

After 6 years

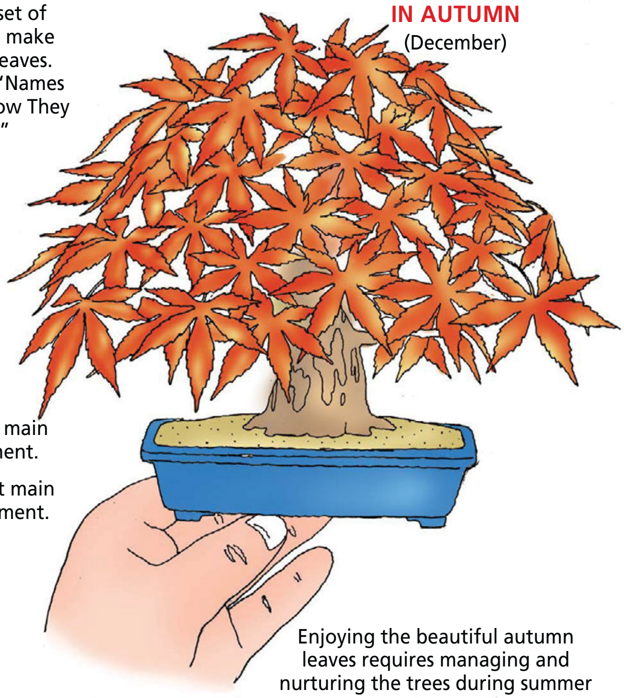
Using an isosceles triangle as your guide for the entire tree shape, keep lower branches long.


Location of 2nd main trunk replacement.
Location of 1st main trunk replacement.
As trunks grow thicker, their bends decrease.

A pot that complements the colors of autumn leaves

VIEWING LEAVES IN AUTUMN

(December)



Enjoying the beautiful autumn leaves requires managing and nurturing the trees during summer months, as well as mitigating problems such as wildly varying temperatures. Bonsai that has been well-maintained will be most attractive.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times/week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling							
April		2–3 times/day						Growth period
May			Add fertilizer		Bud picking	Growth period		
June	Cutting • Layering				Leaf cutting			
July		3–4 times/day	Water & fertilizer	Shading				
August								
September		2–3 times/day	Add fertilizer					
October								Prime • Autumn leaves (November–December)
November	Seedling				Light pruning			
December						Winter		

Replacing the main trunk: In situations where the main trunk of a tree has become too big, we shorten the tree by pruning the main trunk and then fashion a branch from the middle of the trunk into a replacement—the new main trunk.

Japanese Zelkova

JAPANESE NAME
Keyaki

ALTERNATIVE NAMES
Tsuki, Tsukinoki

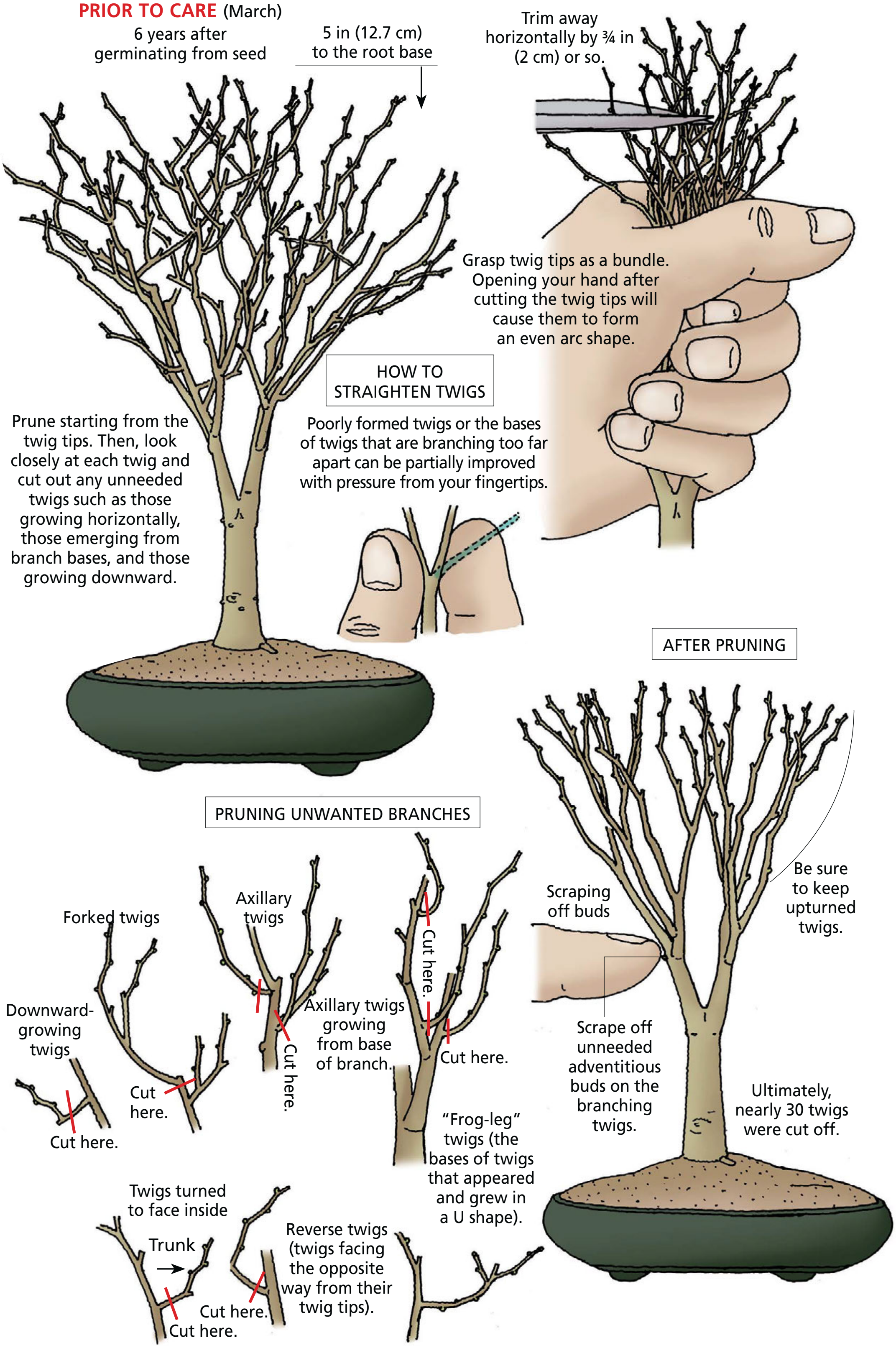
SCIENTIFIC NAME
Zelkova serrata

CLASSIFICATION
Ulmaceae **family (deciduous broadleaf tree / macrophanerophyte)**

SYMBOLIC OF
Happiness, Longevity

PEAK COLOR
November and December

April to May, tiny light yellow and green male flowers open on new stem tips, and female flowers bloom on the upper leaf veins. Because its delicate twigs become the focus of viewing after bearing fruit, and the autumn leaves change color, do not provide the bonsai with too much fertilizer or water. Pruning, pinching off buds* and leaf trimming should be done at appropriate times. Propagation is with seed-grown seedlings or air-layering.



PRIOR TO CARE (March)

6 years after germinating from seed

5 in (12.7 cm)
to the root base

Prune starting from the twig tips. Then, look closely at each twig and cut out any unneeded twigs such as those growing horizontally, those emerging from branch bases, and those growing downward.

TWIG TIP TRIMMING GUIDE

Trim away horizontally by ¾ in (2 cm) or so.

Grasp twig tips as a bundle. Opening your hand after cutting the twig tips will cause them to form an even arc shape.

HOW TO STRAIGHTEN TWIGS

Poorly formed twigs or the bases of twigs that are branching too far apart can be partially improved with pressure from your fingertips.

AFTER PRUNING

Scraping off buds

Scrape off unneeded adventitious buds on the branching twigs.

Be sure to keep upturned twigs.

Ultimately, nearly 30 twigs were cut off.

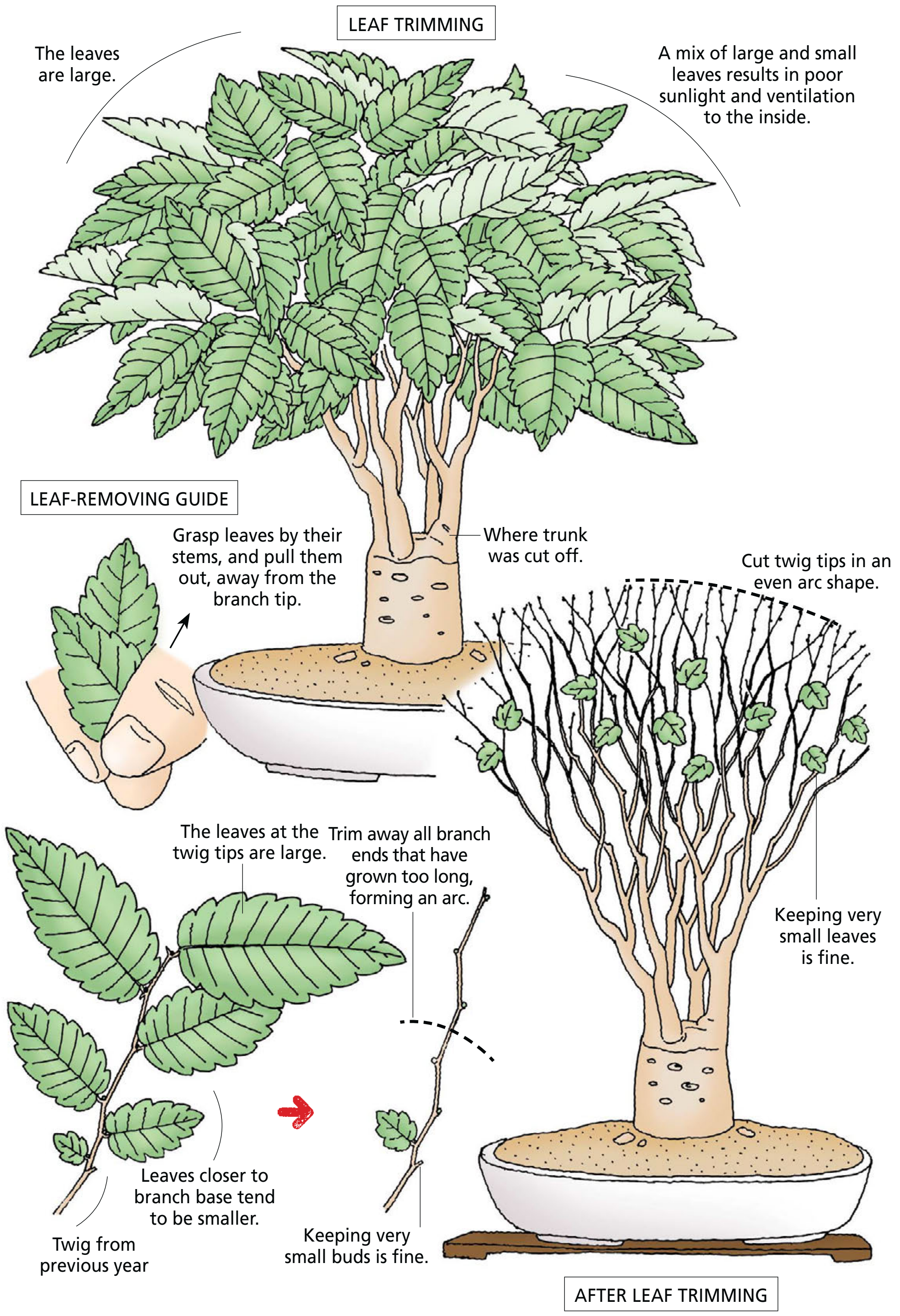
PRUNING UNWANTED BRANCHES

Forked twigs
Cut here.
Downward-growing twigs
Cut here.
Axillary twigs
Cut here.
Axillary twigs growing from base of branch.
Cut here.
Cut here.
"Frog-leg" twigs (the bases of twigs that appeared and grew in a U shape).
Twigs turned to face inside
Trunk
Cut here.
Cut here.
Reverse twigs (twigs facing the opposite way from their twig tips).

Pinching off buds: Because pinching off the first spring buds allows the second buds to grow, many more twigs and smaller leaves are possible.

PRIOR TO CARE (June)

8 years after cutting off the top of the trunk


LEAF TRIMMING
The leaves are large.
A mix of large and small leaves results in poor sunlight and ventilation to the inside.
Where trunk was cut off.
LEAF-REMOVING GUIDE
Grasp leaves by their stems, and pull them out, away from the branch tip.
Cut twig tips in an even arc shape.
Keeping very small leaves is fine.
The leaves at the twig tips are large.
Trim away all branch ends that have grown too long, forming an arc.
Leaves closer to branch base tend to be smaller.
Twig from previous year
Keeping very small buds is fine.
AFTER LEAF TRIMMING

SCHEDULE	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling			Cutting • Layering					Seedling	
Watering	1–2 times/week			2–3 times/day			3–4 times/day		2–3 times/day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Bud picking	Leaf cutting					Light pruning	
Sterilization		Winter			Growth period							Winter
Transplanting			●	●								
Growth State	Dormancy period			Growth period						Prime • Autumn leaves (October–November)		

Ligistrum Obtusifolius

JAPANESE NAME
Ibotanuki

ALTERNATIVE NAMES
Kowanezumimochi, Ibota

SCIENTIFIC NAME
Ligistrum obtusifolius

CLASSIFICATION
Oleaceae (deciduous broadleaf tree / shrub)

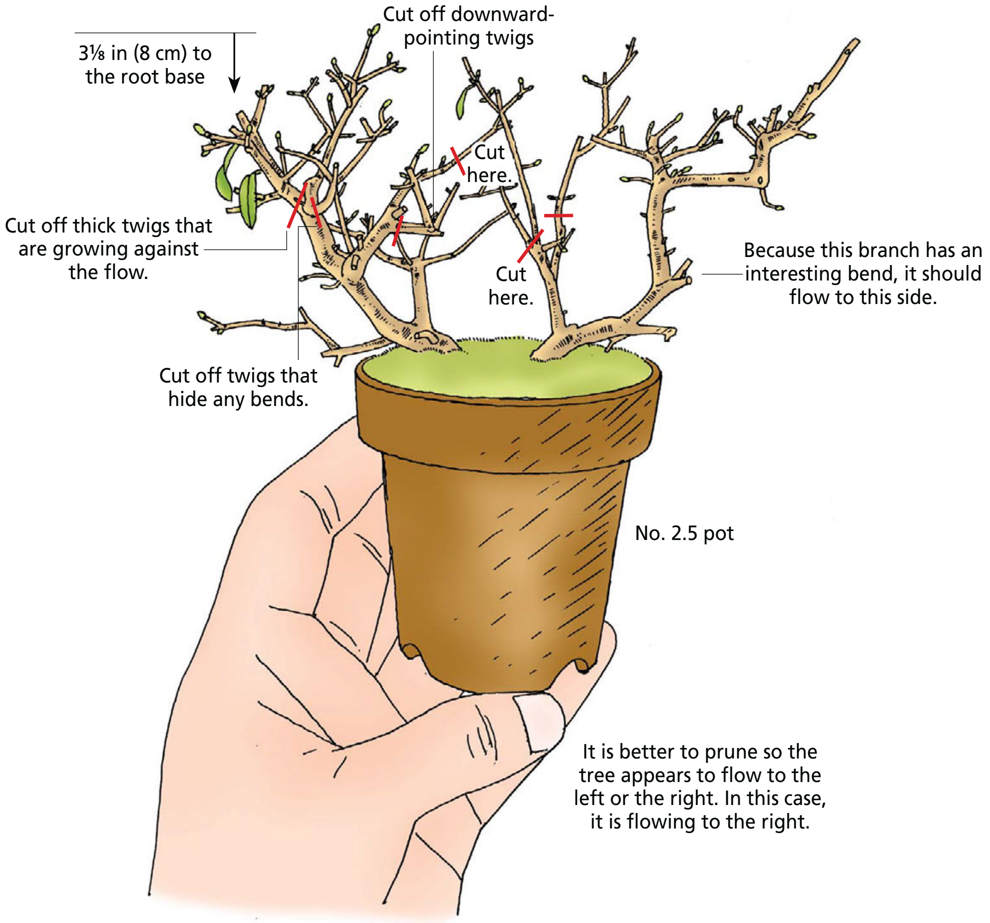
SYMBOLIC OF
Forbiddenness

PEAK COLOR
November and December

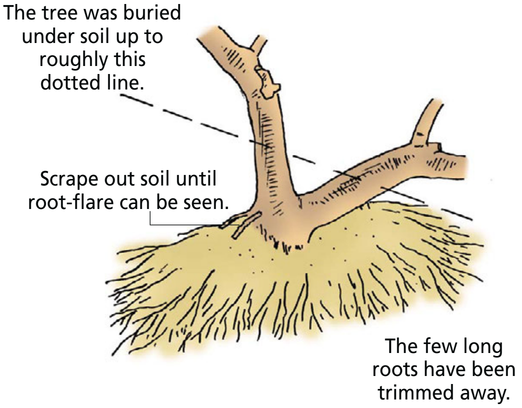
In May and June, small white flowers grow densely on the tips of the tree's twigs, which bear purple-black fruit around October. Twigs are a grayish-white color, branching off in many places, with leaves and branches that grow symmetrically, in opposing sets. Do not pinch off buds or prune anything except for new overgrown branch tips. It is resistant to pruning but easy to care for. Propagating is with cuttings, seed-grown seedlings, or air-layering.

PRIOR TO CARE (March)

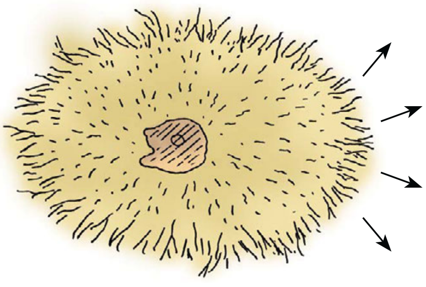
Air layered from the crown branches of a large potted tree, this tree was cut free 3 years ago. Because only the fully-grown twigs have been trimmed away, the unnecessary twigs are noticeable.


3⅛ in (8 cm) to the root base
Cut off downward-pointing twigs
Cut here.
Cut off thick twigs that are growing against the flow.
Cut here.
Because this branch has an interesting bend, it should flow to this side.
Cut off twigs that hide any bends.
No. 2.5 pot
It is better to prune so the tree appears to flow to the left or the right. In this case, it is flowing to the right.

AFTER ROOT SHORTENING

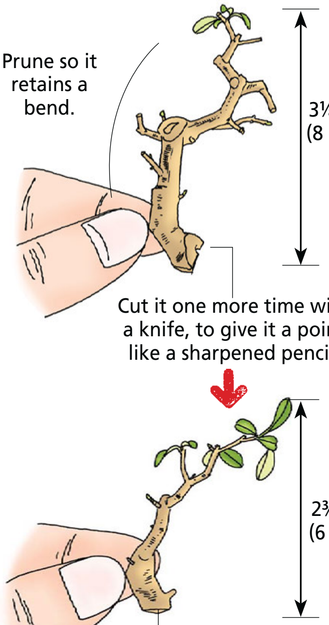

The tree was buried under soil up to roughly this dotted line.
Scrape out soil until root-flare can be seen.
The few long roots have been trimmed away.

THE ROOTS, VIEWED FROM BELOW



By using a chopstick to scrape old soil out from around the thin roots and turn them facing out, the tree will accept its new soil well.

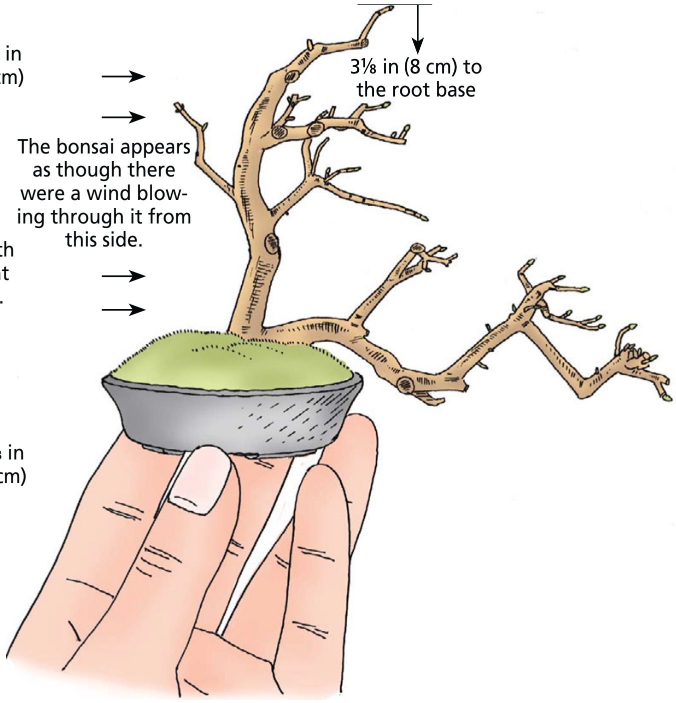
PLANTING CUTTINGS


Prune so it retains a bend.
3⅛ in (8 cm)
Cut it one more time with a knife, to give it a point like a sharpened pencil.
2⅜ in (6 cm)

Sharpen it with a knife and plant it.

AFTER PLANTING

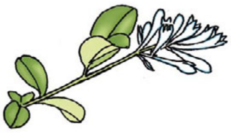
Plant it so the tree appears to flow.


3⅛ in (8 cm) to the root base
The bonsai appears as though there were a wind blowing through it from this side.

FLOWERING GUIDE

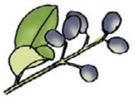
(May to June)

Small white flowers bloom at the end of a fully-grown twig.



FRUIT-BEARING GUIDE

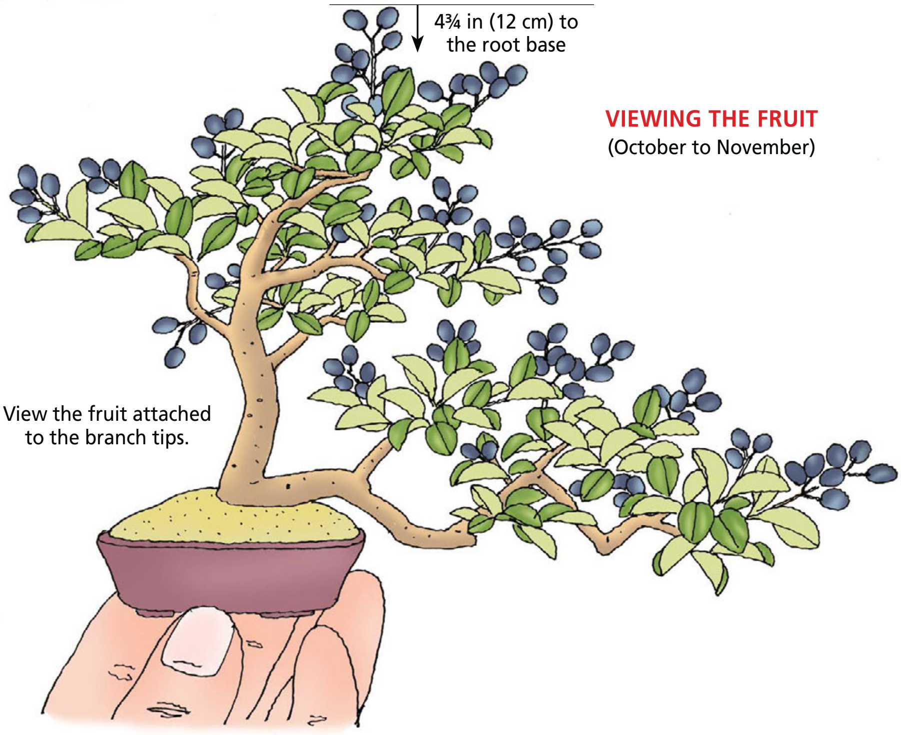
(November to December)



It bears black-purple fruit. They are about ¼ in (7 mm) in diameter.

VIEWING THE FRUIT

(October to November)


4¾ in (12 cm) to the root base

View the fruit attached to the branch tips.

SCHEDULE	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting			Layering • Cutting					Seedling	
Watering	1–2 times/week			2–3 times/day			3–4 times / day		2–3 times/day			▨
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					▨
Shaping		Pruning				Wiring						
Sterilization		Winter				Growth period						Winter
Transplanting			▨									
Growth State	Dormancy period			Growth period • Flowering (May–June)						Prime • Fruiting (October–November)		▨

Korean Hornbeam

JAPANESE NAME
Iwashide

ALTERNATIVE NAME
*Soro**

SCIENTIFIC NAME
Carpinus turczaninovii

CLASSIFICATION
***Betulaceae* (deciduous broadleaf plant / macrophanerophyte)**

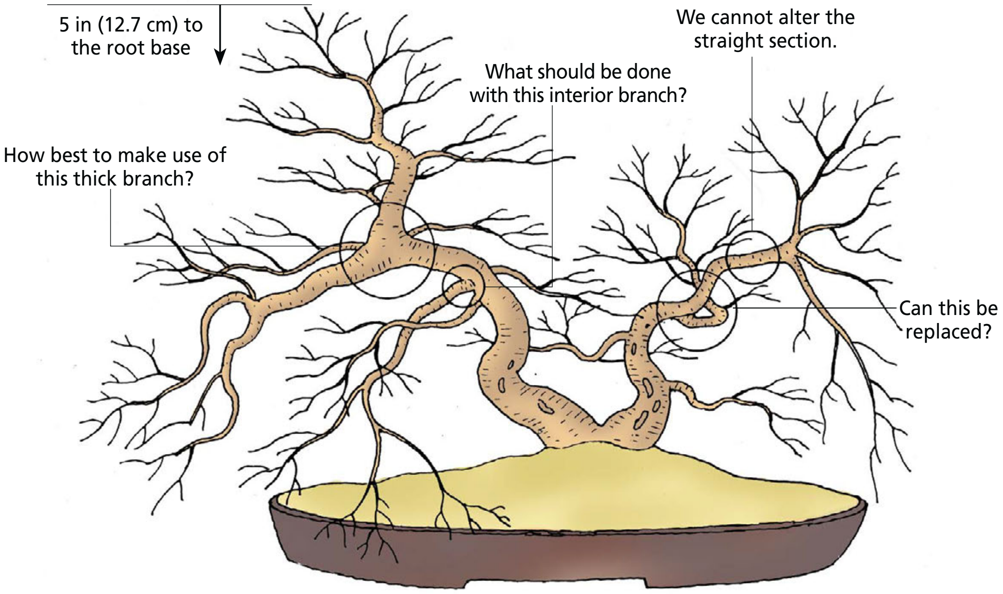
SYMBOLIC OF
n/a

PEAK COLOR
November and December

This tree flowers in April and May. As hornbeams age, shallow tears appear in their milky white bark, resulting in lovely striped patterns. The most vigorous among the hornbeams, the leaves of the Korean hornbeam are small and resilient. New buds will appear successively until August or September, and pinching off buds should be done each time. Propagation is easy with cuttings, seed-grown seedlings, or air-layering.

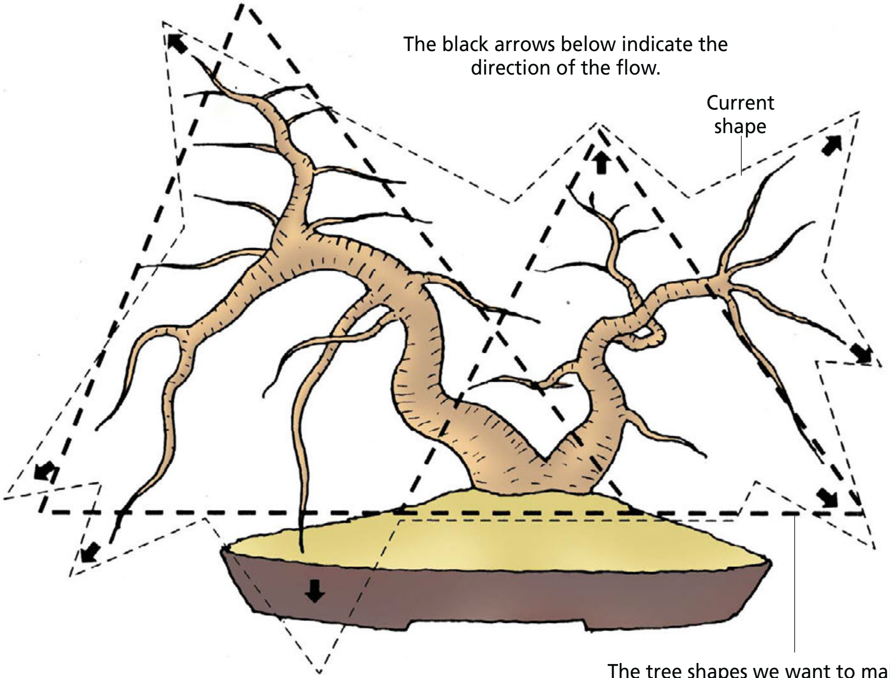
PRIOR TO CARE (February)

5 years after air-layering


5 in (12.7 cm) to the root base
We cannot alter the straight section.
What should be done with this interior branch?
How best to make use of this thick branch?
Can this be replaced?

MODIFICATION OF THE ENTIRE SHAPE

The black arrows below indicate the direction of the flow.


Current shape

The current shape is undefined, and as shown by the arrows and dotted lines, the flow of the twin trunks is indistinct.

The tree shapes we want to make is indicated by the dashed lines. We want the main trunk and the secondary trunk to form the profiles of overlapping isosceles triangles.

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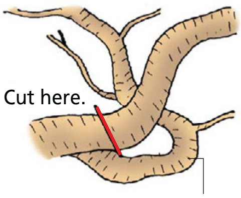
*Soro *(red-leaved hornbeam): In the bonsai world, there are four subspecies, scalled* akashide, inside, iwashide, *and* kumashide.

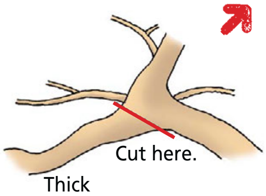
RESHAPING BRANCHES



Cut here.

Replace trunk with the branch that is growing toward the rear.

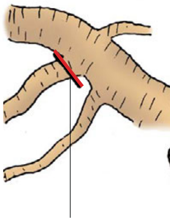
PRUNING THICK BRANCHES



Cut here.

Thick branches

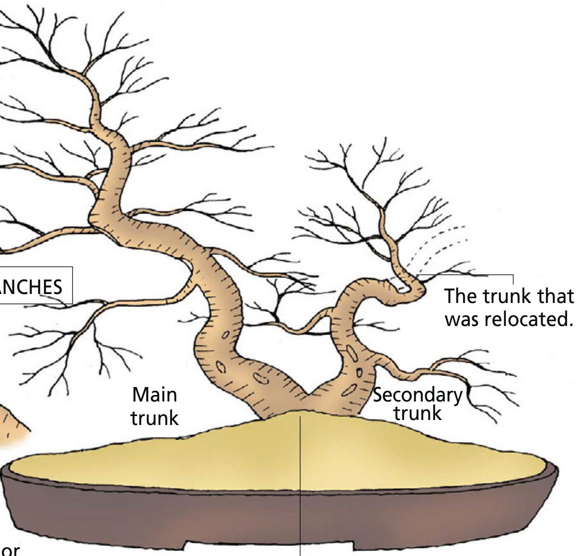
PRUNING OF INTERIOR BRANCHES



Cut off the interior branch that grew from the underside of the trunk.

AFTER PRUNING

Adjust the main trunk and secondary trunk to flow in the same direction, or at least on a similar bearing.



The trunk that was relocated.

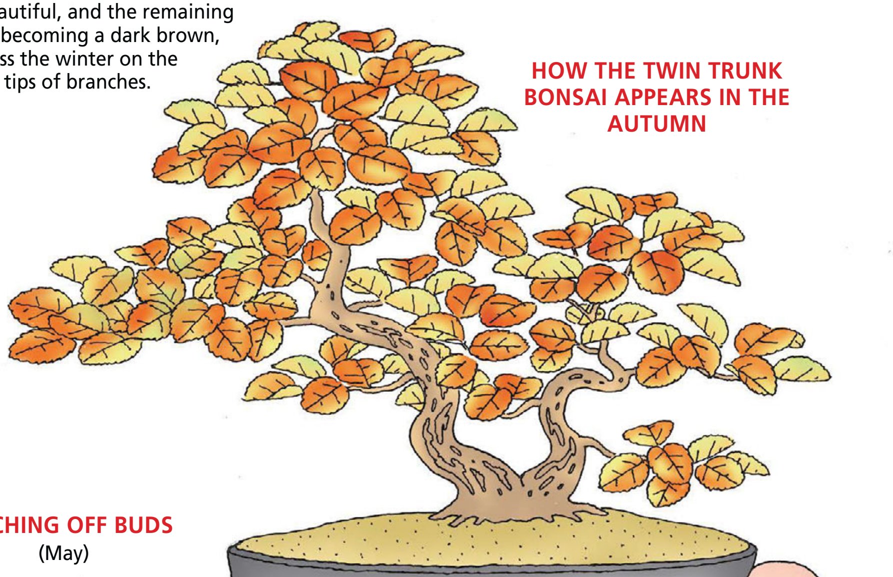
Main trunk

Secondary trunk

Display root-flare as well.

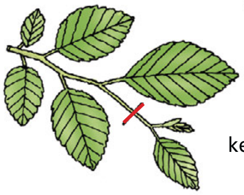
When the leaves have changed to their autumn colors, the bonsai appears beautiful, and the remaining leaves, becoming a dark brown, pass the winter on the tips of branches.

HOW THE TWIN TRUNK BONSAI APPEARS IN THE AUTUMN



PINCHING OFF BUDS

(May)



Pick off leaves, keeping only 4 or 5.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling • Cutting			Layering • Cutting					Seedling	
Watering	1–2 times/week			2–3 times / day			3–4 times/day		2–3 times/day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Bud picking	Wiring						
Sterilization		Winter				Growth period						Winter
Transplanting												
Growth State	Dormancy period			Growth period						Prime • Autumn leaves (October–November)		

Chinese Tamarisk

JAPANESE NAME
Gyoryu

ALTERNATIVE NAMES
Spicewood, Saltcedar

SCIENTIFIC NAME
Tamarix chinensis

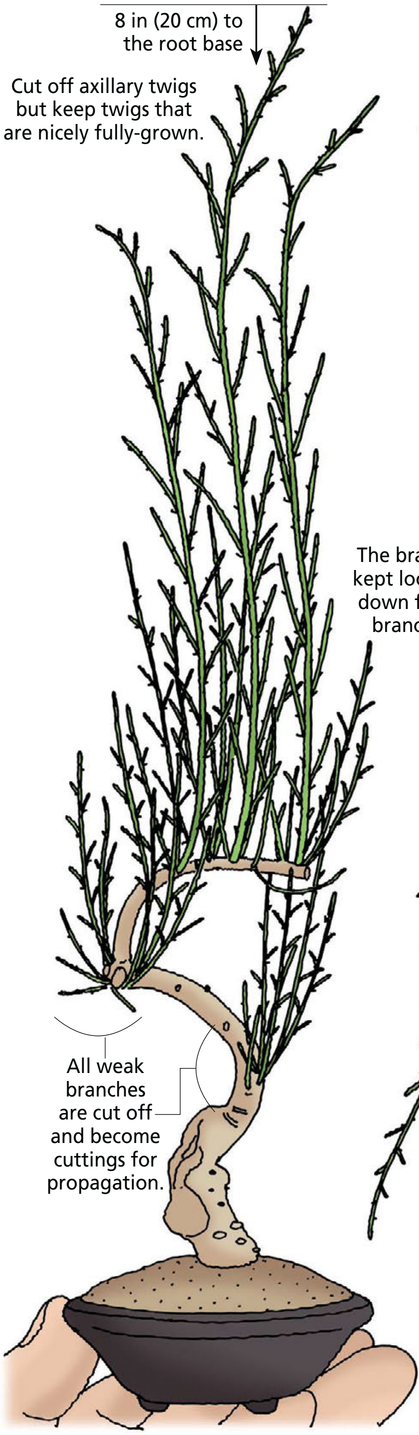
CLASSIFICATION
Tamaricaceae **(deciduous broadleaf plant / under 33 feet / 10 m)**

SYMBOLIC OF
Delinquency

PEAK COLOR
November and December

Pale crimson racemose inflorescence (older flowers appear at the bases of the branches, while younger flowers continue to blossom toward the ends) of the tamarisk bloom twice, in May and again in September. Since their thin branches with densely-packed twigs can grow rather long, bend them with wire to appreciate the suppleness of their branches. Leaves are 3/64 to 5/64 in (1 to 2 mm) long and hug the thin twigs. A cold-resistant species, Tamarisk develops new roots vigorously, so propagating with cuttings is easy.

PRIOR TO CARE 1 (June to July)
5-year-old bonsai after propagating as a cutting.

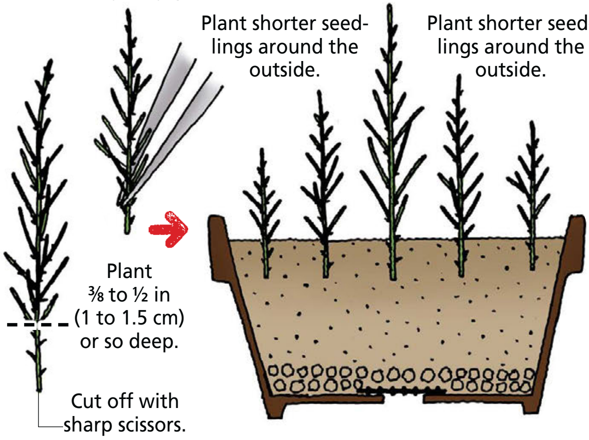


8 in (20 cm) to the root base

Cut off axillary twigs but keep twigs that are nicely fully-grown.

All weak branches are cut off and become cuttings for propagation.

PROPAGATING WITH CUTTINGS



Cut off axillary twigs but keep twigs that are nicely fully-grown.

Plant longer seedlings in the central area.

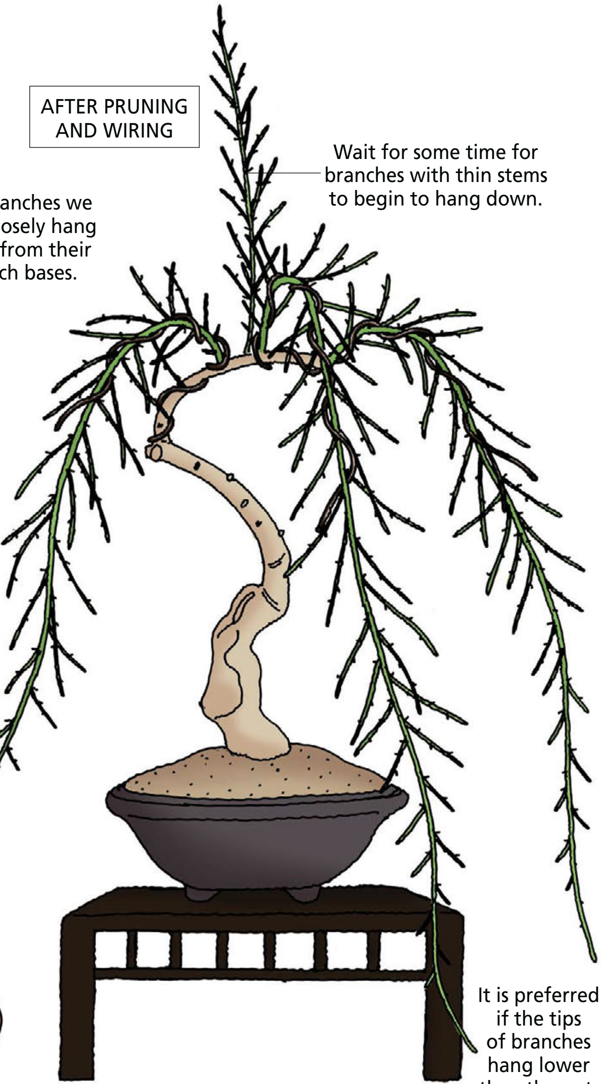
Plant shorter seedlings around the outside.

Plant shorter seedlings around the outside.

Plant ⅜ to ½ in (1 to 1.5 cm) or so deep.

Cut off with sharp scissors.

AFTER PRUNING AND WIRING



The branches we kept loosely hang down from their branch bases.

Wait for some time for branches with thin stems to begin to hang down.

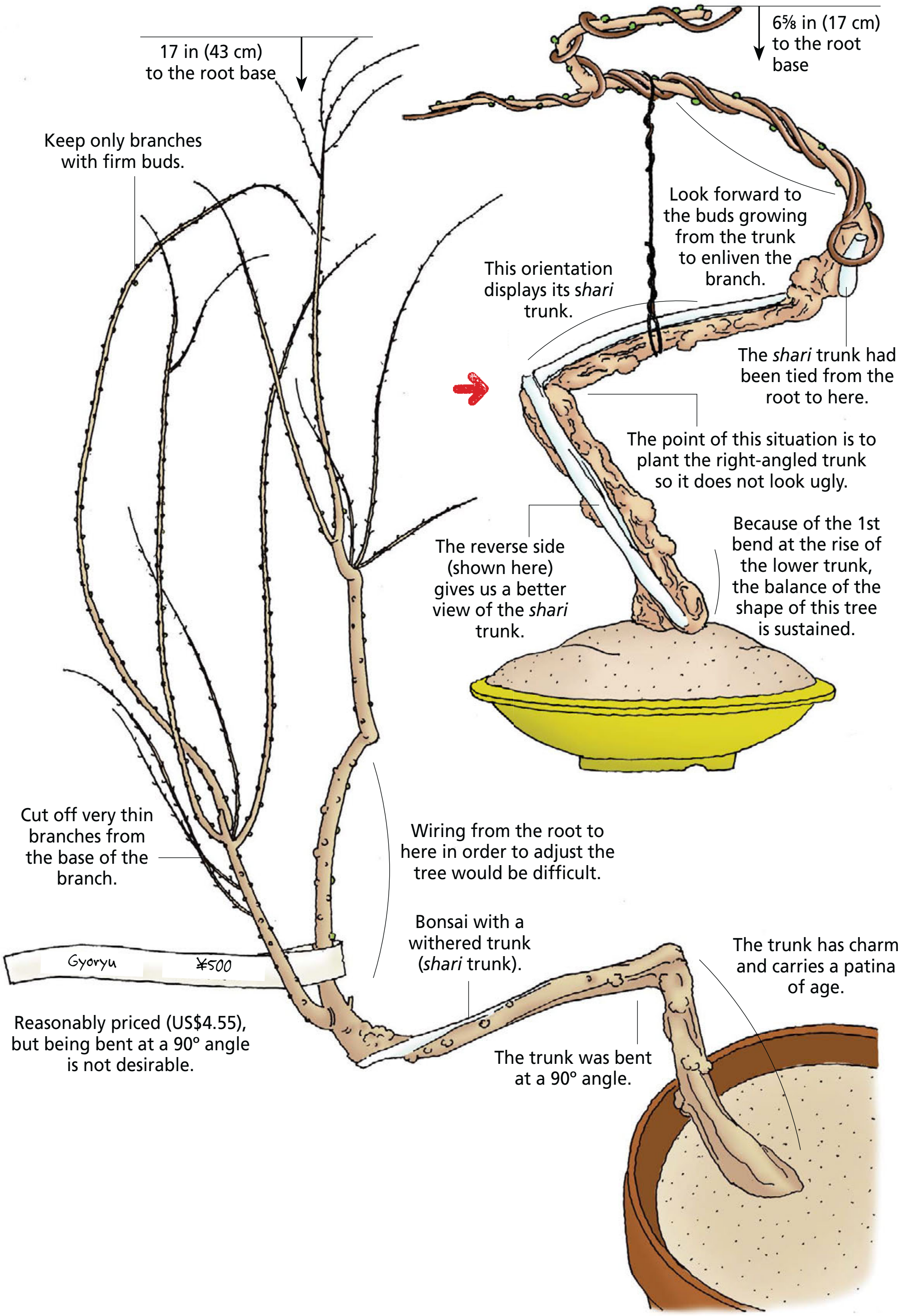
It is preferred if the tips of branches hang lower than the pot.

PRIOR TO CARE 2 (March)

12 years after propagating as a cutting

FOLLOWING CARE

Change the back to the front



17 in (43 cm) to the root base

Keep only branches with firm buds.

Cut off very thin branches from the base of the branch.

Reasonably priced (US$4.55), but being bent at a 90° angle is not desirable.

Wiring from the root to here in order to adjust the tree would be difficult.

Bonsai with a withered trunk (*shari* trunk).

The trunk was bent at a 90° angle.

The trunk has charm and carries a patina of age.

6⅝ in (17 cm) to the root base

Look forward to the buds growing from the trunk to enliven the branch.

This orientation displays its *shari* trunk.

The *shari* trunk had been tied from the root to here.

The point of this situation is to plant the right-angled trunk so it does not look ugly.

The reverse side (shown here) gives us a better view of the *shari* trunk.

Because of the 1st bend at the rise of the lower trunk, the balance of the shape of this tree is sustained.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times/week		Protection room				Dormancy period
February					Pruning	Winter		
March	Cutting							
April		2–3 times / day						Growth period • Flowering (May • September)
May			Add fertilizer			Growth period		
June	Cutting				Wiring			
July		3–4 times/day	Water & fertilizer	Shading				
August								
September		2–3 times/day	Add fertilizer					
October								Prime
November								
December						Winter		

Spicewood

JAPANESE NAME
Yamakobashi

ALTERNATIVE NAMES
Spicebush, Benjamin Bush

SCIENTIFIC NAME
Lindera glauca

CLASSIFICATION
Lauraceae **(deciduous broadleaf plant / shrub)**

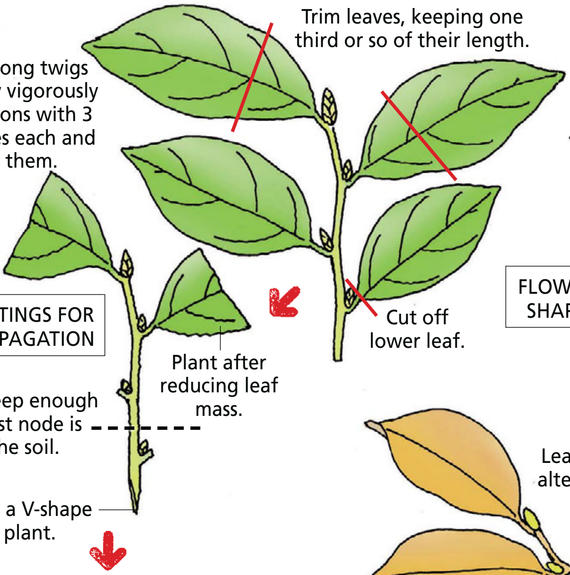
SYMBOLIC OF
n/a

PEAK COLOR
November and December

From April to May, both buds and yellow florets bloom, and black fruit appears on the tree in the autumn. After changing to a tan color, the withered leaves remain on the branches for some time, retaining their elegance. Propagating is with cuttings, air-layering or seed-grown seedlings.

PROPAGATING WITH CUTTINGS

(June)



Trim leaves, keeping one third or so of their length.

Cut the long twigs that grew vigorously into sections with 3 to 4 nodes each and plant them.

CUTTINGS FOR PROPAGATION

Cut off lower leaf.

Plant after reducing leaf mass.

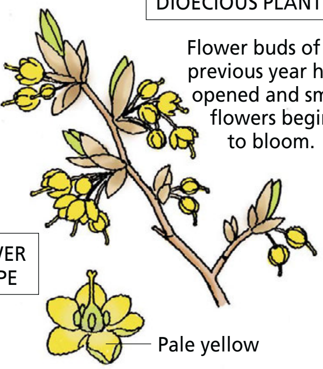
Plant deep enough that 1st node is in the soil.

Cut into a V-shape and plant.

FLOWERING

(April)

DIOECIOUS PLANTS



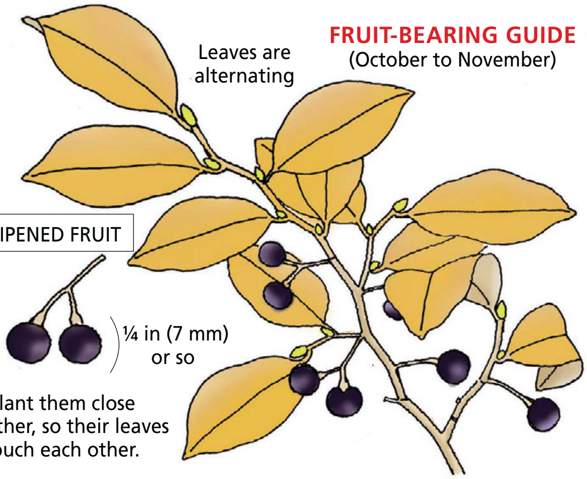
Flower buds of the previous year have opened and small flowers begin to bloom.

FLOWER SHAPE

Pale yellow

FRUIT-BEARING GUIDE

(October to November)



Leaves are alternating

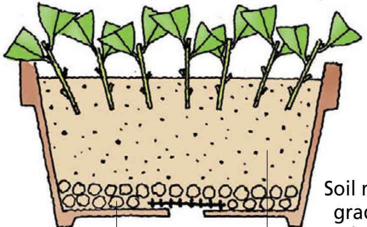
RIPENED FRUIT

¼ in (7 mm) or so

Although a dioecious tree, it tends to bear fruit when the flowers have bloomed.

WIRING AND PLANTING GUIDE

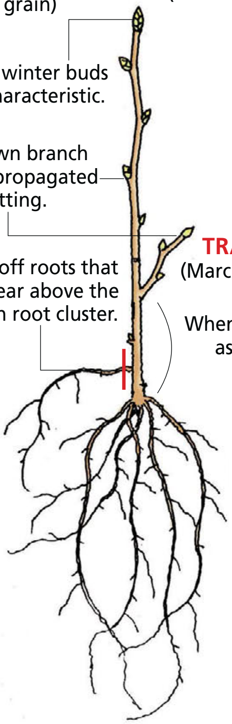
For best exposure to sunlight, plant cuttings upright in the center, and at increasingly outward angles toward the edge.



Plant them close together, so their leaves touch each other.

Akadama soil (medium grain)

Soil mix should be fine grade *Akadama* soil, or fine grade *Kiryu* soil (avoid using fine, dusty soil).



Large winter buds are characteristic.

A fully-grown branch after being propagated as a cutting.

Cut off roots that appear above the main root cluster.

TRANSPLANTING

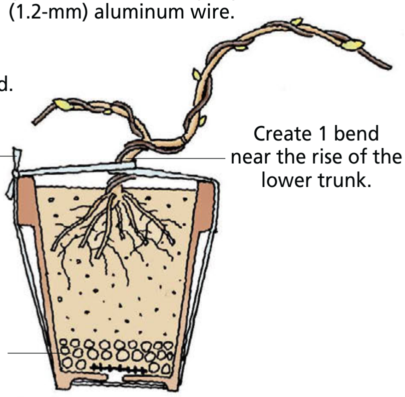
(March of following year)

When propagated as a cutting

Gravel bed (*Akadama* soil ⅛ to ¼ in / 4 to 6 mm in diameter)

WIRING AND PLANTING GUIDE

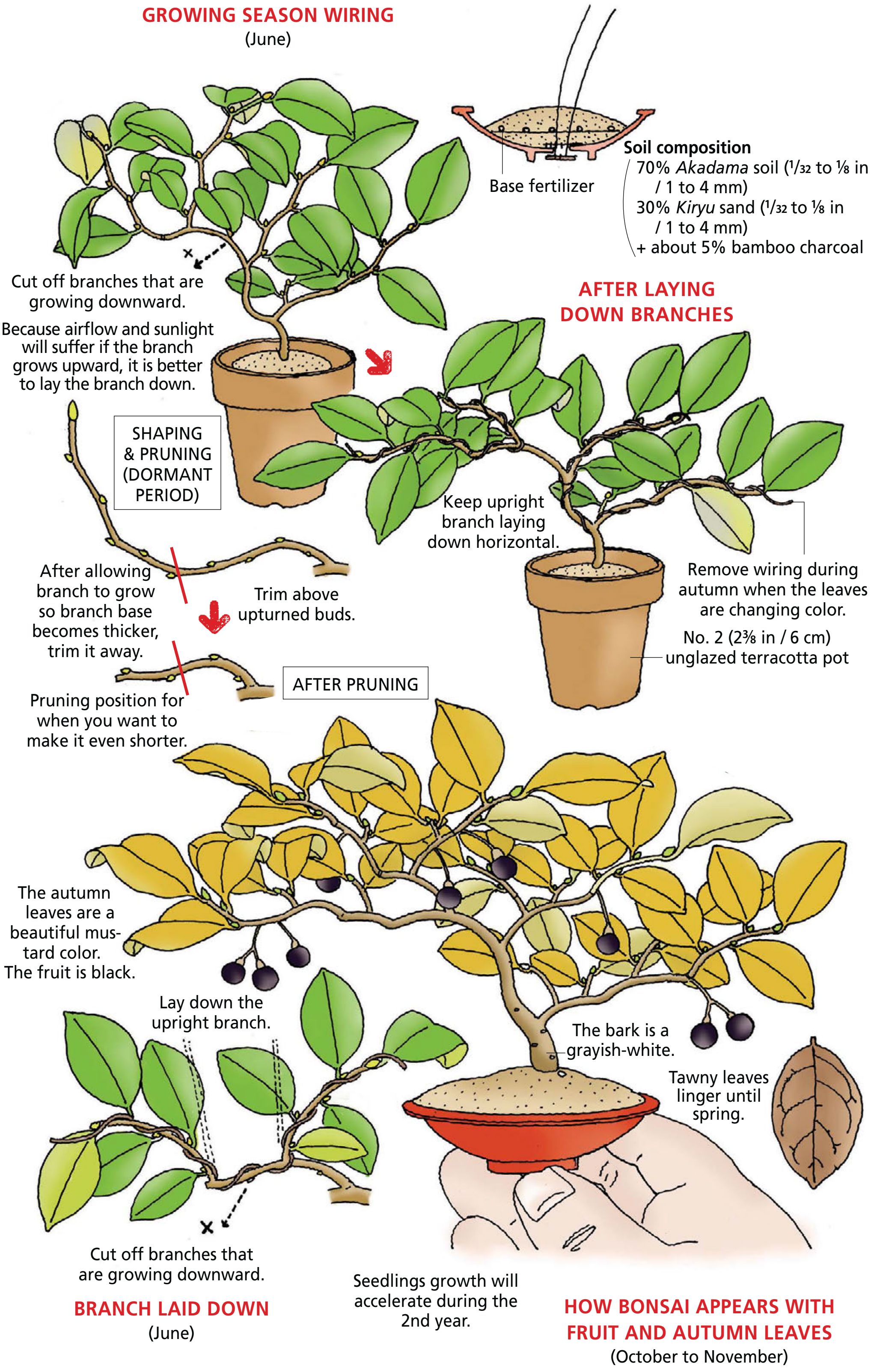
Establish a large bend, keeping it in place with 17-gauge (1.2-mm) aluminum wire.



Secure with cord.

Create 1 bend near the rise of the lower trunk.

Soil composition
70% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
30% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal



GROWING SEASON WIRING
(June)

Base fertilizer

Soil composition
70% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
30% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

Cut off branches that are growing downward.

Because airflow and sunlight will suffer if the branch grows upward, it is better to lay the branch down.

AFTER LAYING DOWN BRANCHES

Keep upright branch laying down horizontal.

Remove wiring during autumn when the leaves are changing color.

No. 2 (2⅜ in / 6 cm) unglazed terracotta pot

SHAPING & PRUNING (DORMANT PERIOD)

After allowing branch to grow so branch base becomes thicker, trim it away.

Trim above upturned buds.

AFTER PRUNING

Pruning position for when you want to make it even shorter.

The autumn leaves are a beautiful mustard color. The fruit is black.

Lay down the upright branch.

The bark is a grayish-white.

Tawny leaves linger until spring.

Cut off branches that are growing downward.

BRANCH LAID DOWN
(June)

Seedlings growth will accelerate during the 2nd year.

HOW BONSAI APPEARS WITH FRUIT AND AUTUMN LEAVES
(October to November)

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		1–2 times/week		Protection room				Dormancy period
February					Pruning	Winter		
March	Seedling				Wiring		■	
April		2–3 times/day	Add fertilizer					Growth period • Flowering (April–May)
May								
June	Cutting				Wiring	Growth period		
July		3–4 times/day	Water & fertilizer	Shading				
August								
September		2–3 times/day	Add fertilizer					
October								Prime • Fruiting
November	Seedling				Pruning			
December		■		■		Winter		■

Japanese Beech

JAPANESE NAME
Buna

ALTERNATIVE NAME
Siebold's beech

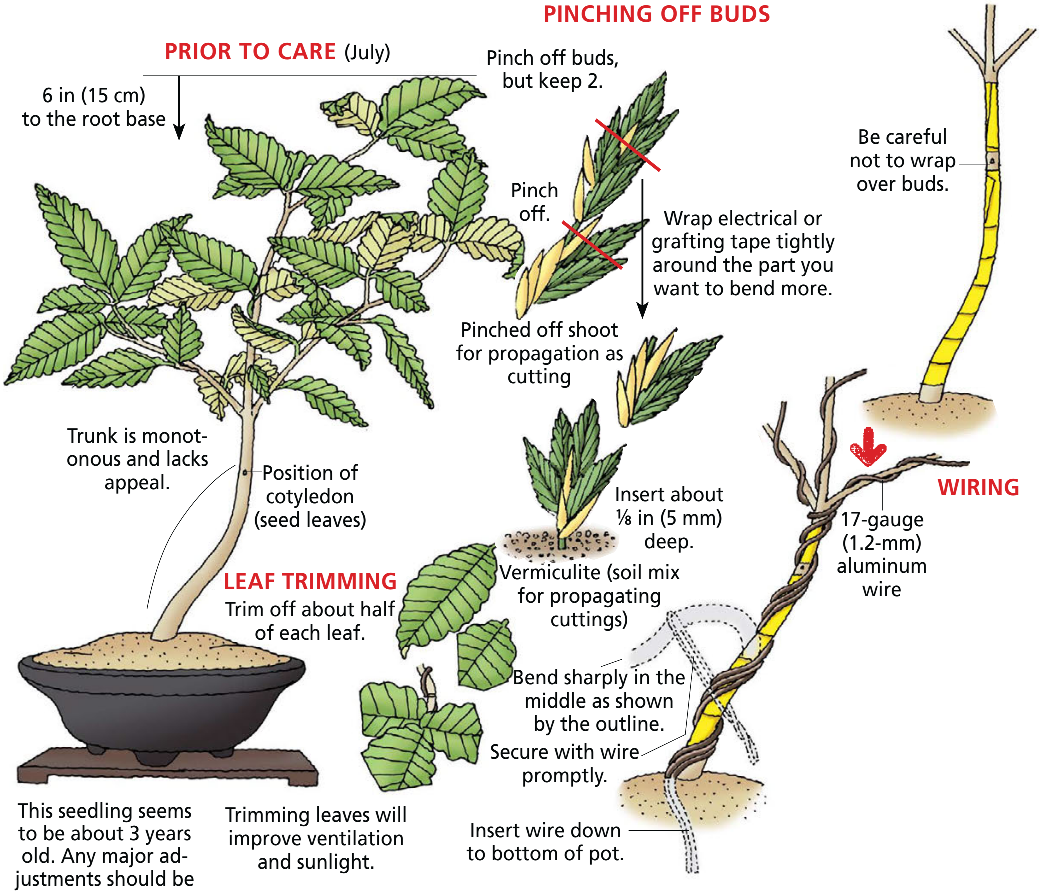
SCIENTIFIC NAME
Fagus crenata

CLASSIFICATION
***Fagaceae* (deciduous broadleaf tree)**

SYMBOLIC OF
Prosperity

PEAK COLOR
November and December

The bark is a smooth grayish white. Leaves turn brown in autumn, but remain on the branches to pass the winter. In Japanese, this is called yuzuri-ha (lit. "deferring leaf") because the brown leaves only fall after new leaves have formed in the spring. Its flowers bloom while the new leaf buds open, and its tough, pyramid-shaped seeds ripen in autumn. Propagation is with seed-grown seedlings, planting pinched-off shoots, and air-layering.



PRIOR TO CARE (July)

6 in (15 cm) to the root base

Trunk is monotonous and lacks appeal.

Position of cotyledon (seed leaves)

This seedling seems to be about 3 years old. Any major adjustments should be done at this age.

PINCHING OFF BUDS

Pinch off buds, but keep 2.

Pinch off.

Pinched off shoot for propagation as cutting

Insert about ⅛ in (5 mm) deep.

Vermiculite (soil mix for propagating cuttings)

LEAF TRIMMING

Trim off about half of each leaf.

Trimming leaves will improve ventilation and sunlight.

WIRING

Be careful not to wrap over buds.

Wrap electrical or grafting tape tightly around the part you want to bend more.

17-gauge (1.2-mm) aluminum wire

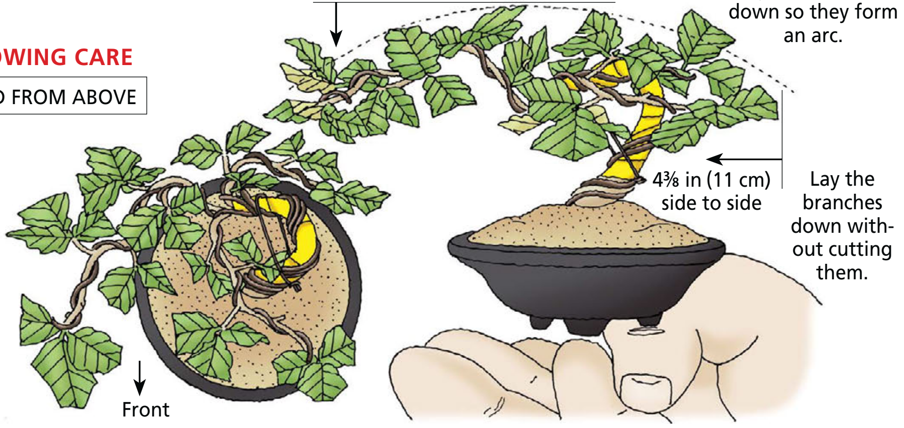
Bend sharply in the middle as shown by the outline.

Secure with wire promptly.

Insert wire down to bottom of pot.

FOLLOWING CARE

VIEWED FROM ABOVE



Front

2 in (5 cm) to the root base

Lay the branches down so they form an arc.

4⅜ in (11 cm) side to side

Lay the branches down without cutting them.

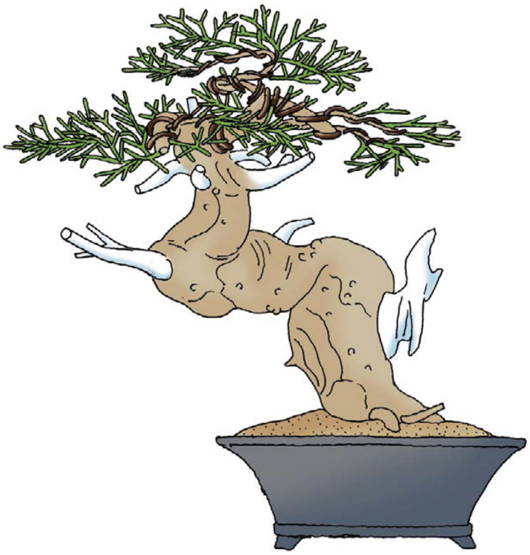
SCHEDULE

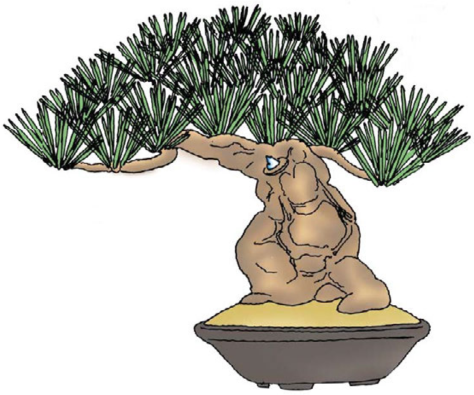
	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling	Cutting		Layering					Seedling	
Watering	1–2 times / week			2–3 times / day			3–4 times / day		2–3 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping		Pruning			Bud picking	Wiring		Bud cutting				
Sterilization		Winter			Growth stage							Winter
Transplanting				▨								
Growth State	Dormancy period			Growth period						Prime		

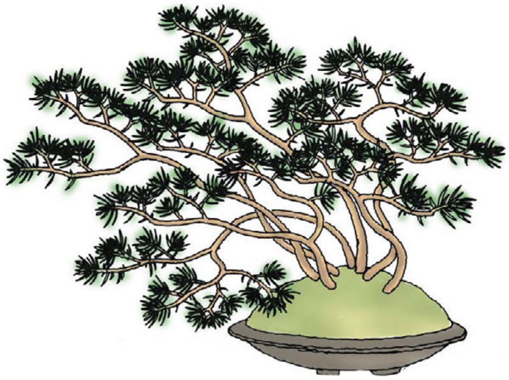
THE BONSAI MOST EMBLEMATIC OF JAPAN'S RUGGED LANDSCAPE

How to Care for Coniferous Bonsai

When we hear the word "bonsai," what naturally comes to mind is a pine or other conifer. Their form possesses both a strength and a patina of maturity that can be said to fully represent the majesty and prestige of bonsai.







OBSERVE THE QUINTESSENCE OF BONSAI IN AN ENDLESS VARIETY OF FORMS

From time immemorial in Japan—due to the way that they maintain their verdure year-round—evergreen conifers such as pine, cedar and cypress have been symbols of unyielding strength and steadfast fidelity in the face of adversity. This is also true for bonsai, generally sharing similar longevity and robust, healthy lives with their counterparts growing in the wild.

Conifers can potentially be trained into any shape of tree (refer to pages 12 and 13). The hanging-cliff tree shape is reminiscent of sheer precipices deep in the mountains, and the windswept tree shape is reminiscent of rock faces in alpine and coastal regions. In addition, the rough, split bark of the trunk and weathered, bleached "bones" of *jin* and *shari* lend great appeal to coniferous bonsai.

The majestic and powerful black pine (*kuromatsu*), the graceful and subdued Japanese white pine (*goyōmatsu*), and the subtle and profound, yet unconventional-looking Japanese emperor oak (*makashiwa*)—these comprise the "big three" of coniferous bonsai.

Japanese Black Pine

JAPANESE NAME
Kuromatsu

ALTERNATIVE NAMES
Japanese Pine, *Omatsu*

SCIENTIFIC NAME
Pinus thunbergii

CLASSIFICATION
***Pinaceae* (evergreen conifer / tree)**

SYMBOLIC OF
Longevity, Bravery

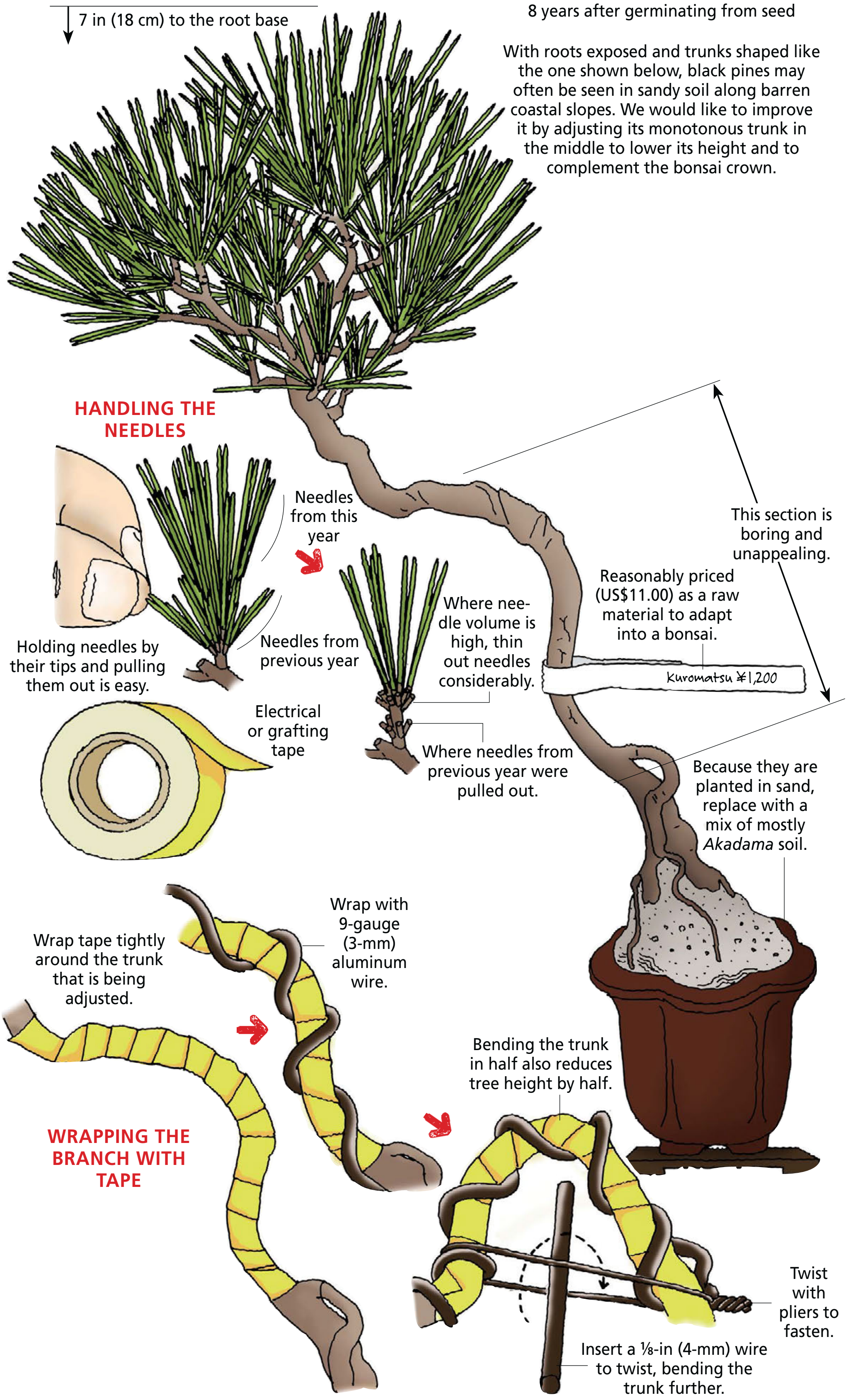
PEAK SEASON
October to November

As the bark grows older, cracks reminiscent of a turtle's shell will appear and peel off in scales. The winter buds are thick and white and can easily be distinguished from red pine (red pine appears in reddish brown). It is necessary to pluck and cut the buds so that the green buds can grow and divide without causing the branch itself to lengthen much. Breeding can be done through seed-grown seedlings and air-layering.

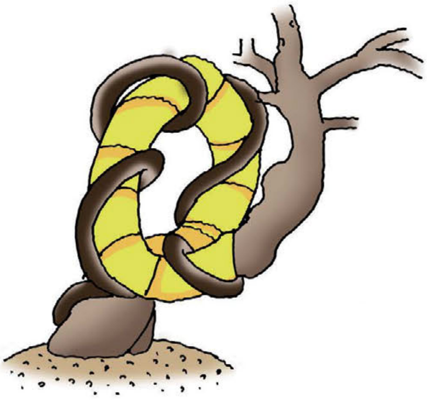
PRIOR TO CARE 1

(March)
8 years after germinating from seed

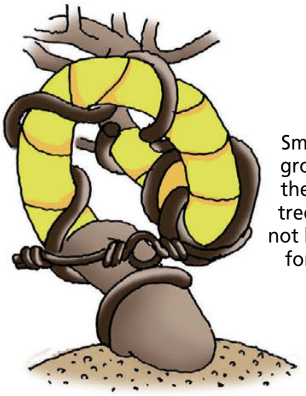
With roots exposed and trunks shaped like the one shown below, black pines may often be seen in sandy soil along barren coastal slopes. We would like to improve it by adjusting its monotonous trunk in the middle to lower its height and to complement the bonsai crown.


7 in (18 cm) to the root base
HANDLING THE NEEDLES
Needles from this year
Needles from previous year
Holding needles by their tips and pulling them out is easy.
Where needle volume is high, thin out needles considerably.
Where needles from previous year were pulled out.
This section is boring and unappealing.
Reasonably priced (US$11.00) as a raw material to adapt into a bonsai.
Kuromatsu ¥1,200
Because they are planted in sand, replace with a mix of mostly *Akadama* soil.
Electrical or grafting tape
Wrap tape tightly around the trunk that is being adjusted.
Wrap with 9-gauge (3-mm) aluminum wire.
WRAPPING THE BRANCH WITH TAPE
Bending the trunk in half also reduces tree height by half.
Twist with pliers to fasten.
Insert a ⅛-in (4-mm) wire to twist, bending the trunk further.

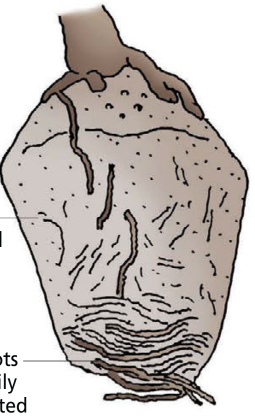
BENDING OF THE TRUNK (FROM THE LEFT SIDE)



BENDING OF THE TRUNK (FROM THE RIGHT SIDE)



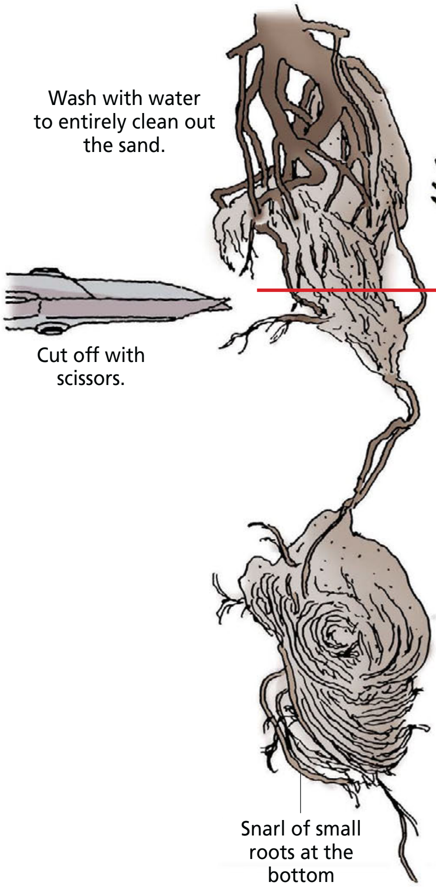
CONDITION OF ROOTS



Small roots have grown and filled the pot, and this tree has certainly not been replanted for a long time.

Small roots are heavily concentrated in a tangle at the bottom.

ROOT SHORTENING

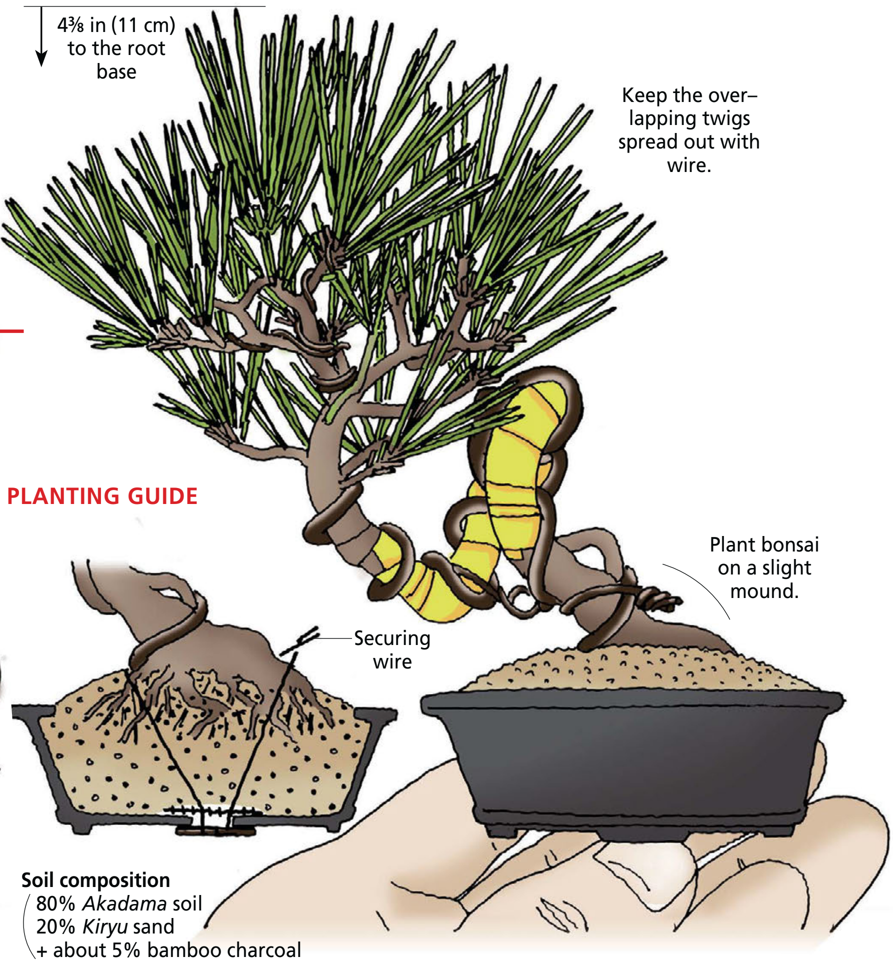


Wash with water to entirely clean out the sand.

Cut off with scissors.

Snarl of small roots at the bottom

AFTER PLANTING



4⅜ in (11 cm) to the root base

Keep the over–lapping twigs spread out with wire.

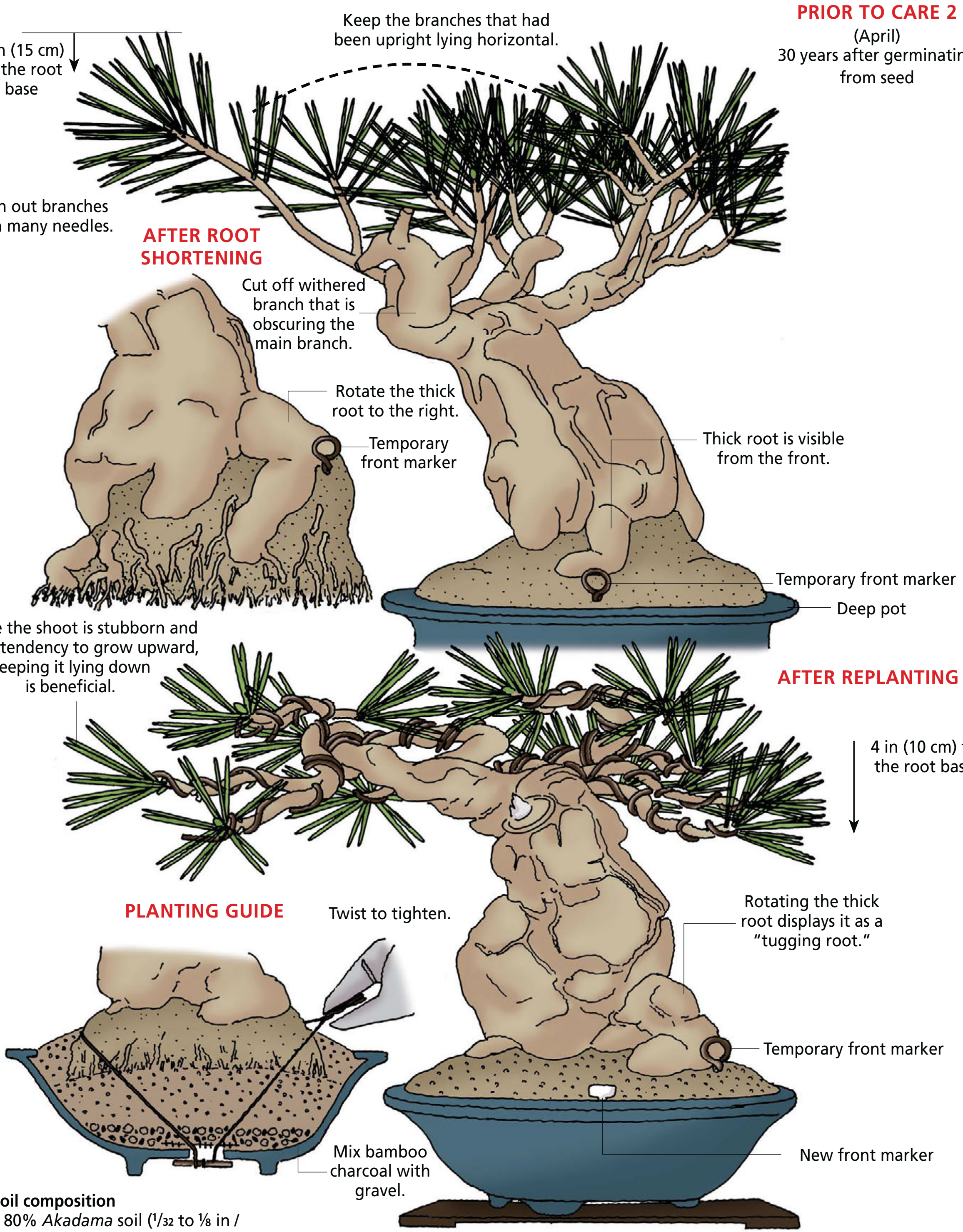
Plant bonsai on a slight mound.

PLANTING GUIDE

Securing wire

Soil composition
80% *Akadama* soil
20% *Kiryu* sand
+ about 5% bamboo charcoal

Replanting


PRIOR TO CARE 2
(April)
30 years after germinating from seed
6 in (15 cm) to the root base
Keep the branches that had been upright lying horizontal.
Thin out branches with many needles.
AFTER ROOT SHORTENING
Cut off withered branch that is obscuring the main branch.
Rotate the thick root to the right.
Temporary front marker
Thick root is visible from the front.
Temporary front marker
Deep pot
Because the shoot is stubborn and has the tendency to grow upward, keeping it lying down is beneficial.
AFTER REPLANTING
4 in (10 cm) to the root base
PLANTING GUIDE
Twist to tighten.
Rotating the thick root displays it as a “tugging root.”
Temporary front marker
New front marker
Mix bamboo charcoal with gravel.

Soil composition

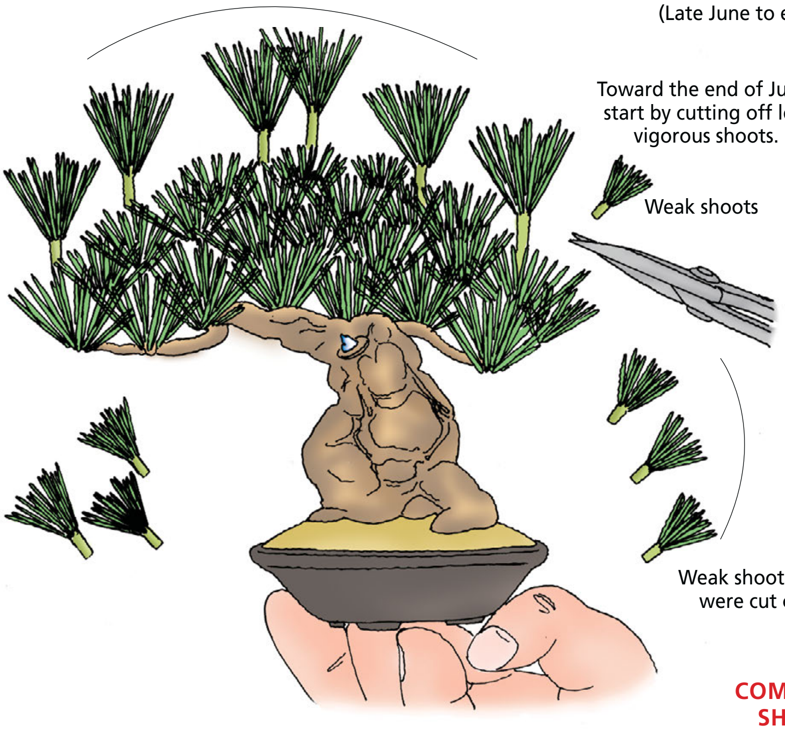
80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)

20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)

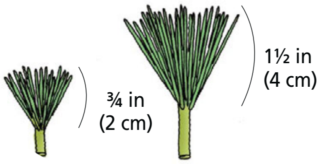
TRIMMING SECOND SHOOTS

(Late June to early July)

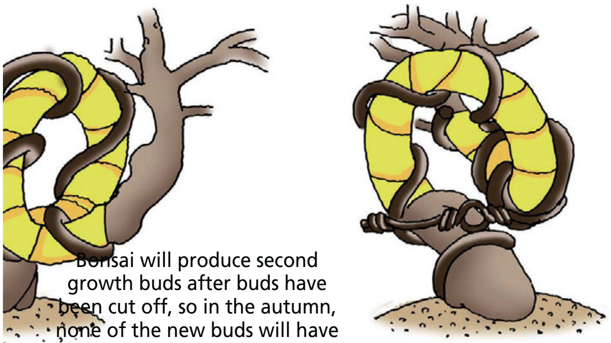
Toward the end of June, start by cutting off less vigorous shoots.


Cut off vigorous shoots in early July.
Weak shoots
Weak shoots that were cut off.

COMPARING SHOOTS


¾ in (2 cm)
1½ in (4 cm)
Weak shoots
Strong shoots

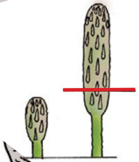
AFTER TRIMMING SHOOTS



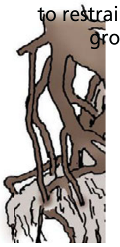
Bonsai will produce second growth buds after buds have been cut off, so in the autumn, none of the new buds will have any strength.

BUD PICKING

(May)


Weak shoots
Strong shoots

Pinch off both strong and weak buds equally to restrain vigorous growth.



SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling			Layering						
Watering	1–2 times/week			2–3 times/day			3–4 times/day		2–3 times/day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping					Bud picking	Wiring						Needle removal
Sterilization		Winter		Growth period								Winter
Transplanting												
Growth State	Dormancy period			Growth period						Prime		

Japanese White Pine

JAPANESE NAME
Goyomatsu

ALTERNATE NAME
Five-needle pine

SCIENTIFIC NAME
Pinus parviflora

CLASSIFICATION
***Pinaceae* (evergreen conifer / tree)**

SYMBOLIC OF
Longevity, Bravery

PEAK SEASON
October to November

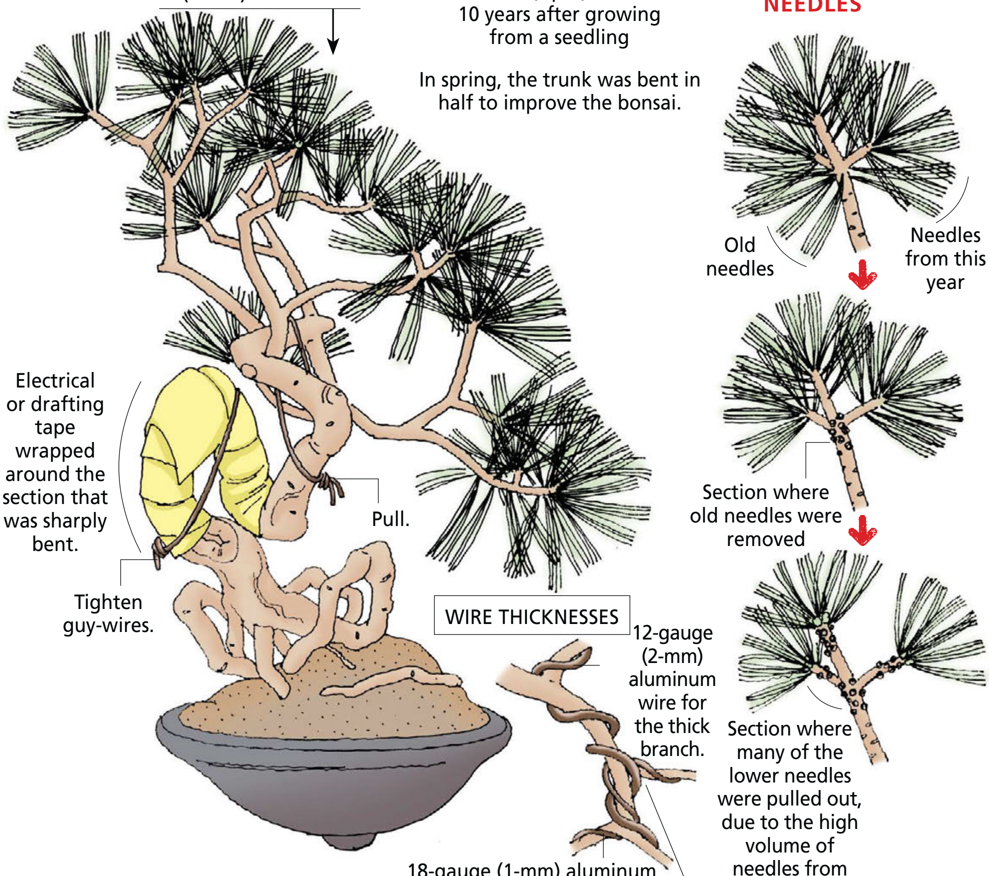
This tree's bark is a dark gray and, with age, peels off in thin layers. Branches will divide frequently, and the tendency of short branches to germinate is strong. The tips of the winter buds are rounded and the needles turn gray. The fresh green buds of black pine are not so vigorous, and are thwarted simply by pinching them off. Propagation is with seed-grown seedlings, grafting, or air-layering.

WIRING

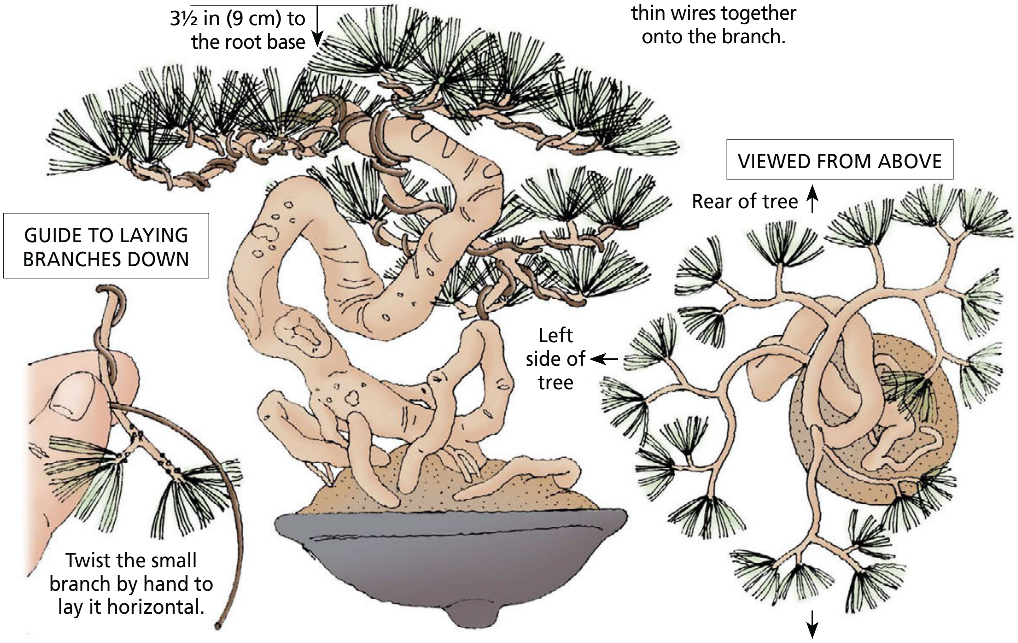
(April)
10 years after growing from a seedling

In spring, the trunk was bent in half to improve the bonsai.

THINNING OUT NEEDLES


6⅝ in (17 cm) to the root base
Electrical or drafting tape wrapped around the section that was sharply bent.
Pull.
Tighten guy-wires.
Old needles
Needles from this year
Section where old needles were removed
Section where many of the lower needles were pulled out, due to the high volume of needles from this year.
WIRE THICKNESSES
12-gauge (2-mm) aluminum wire for the thick branch.
18-gauge (1-mm) aluminum wire for the thin twig.
Wind the thick and thin wires together onto the branch.

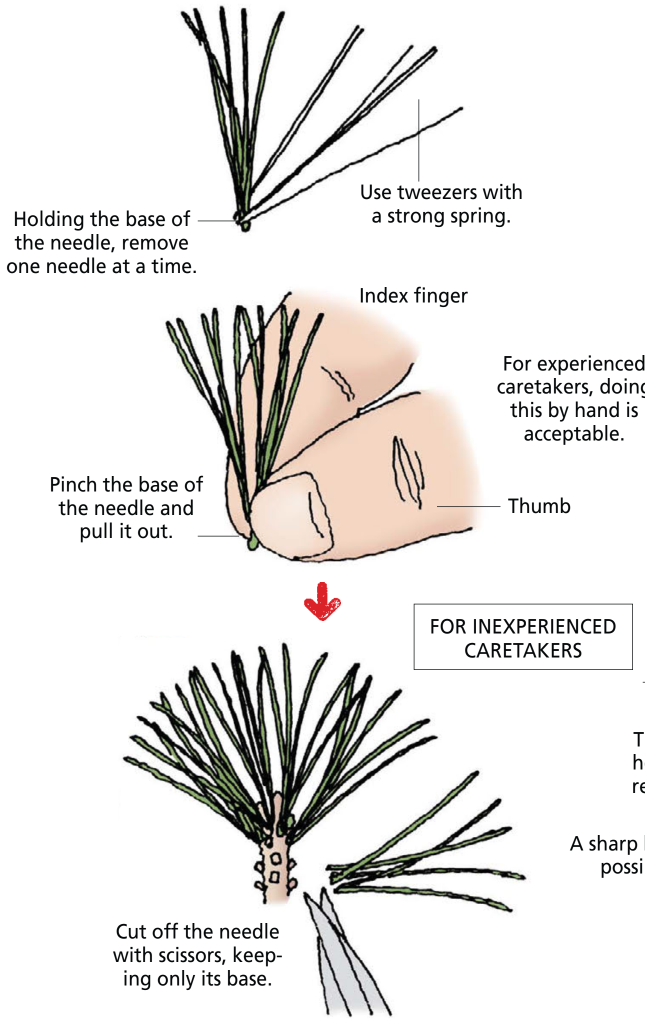
AFTER WIRING BRANCHES


3½ in (9 cm) to the root base
GUIDE TO LAYING BRANCHES DOWN
Twist the small branch by hand to lay it horizontal.
Left side of tree
VIEWED FROM ABOVE
Rear of tree
Front of tree

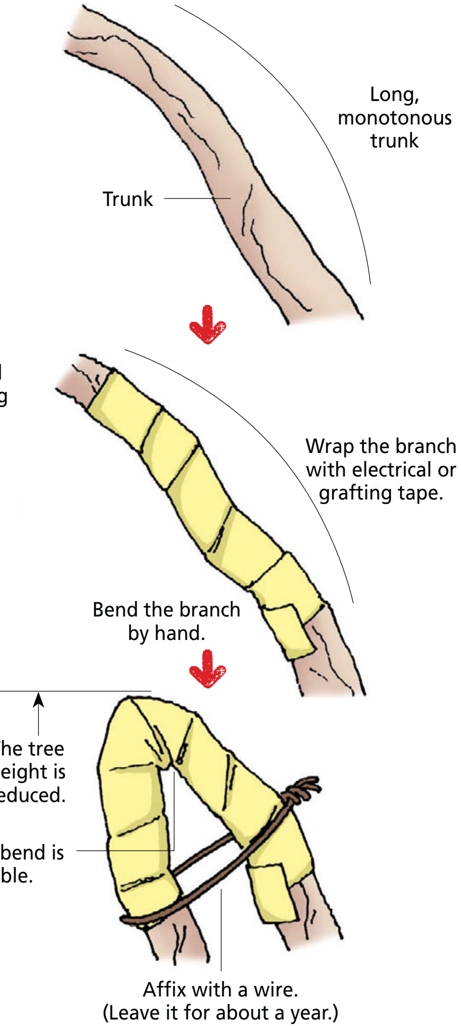
Wire it to secure it in that position.

View from front of tree

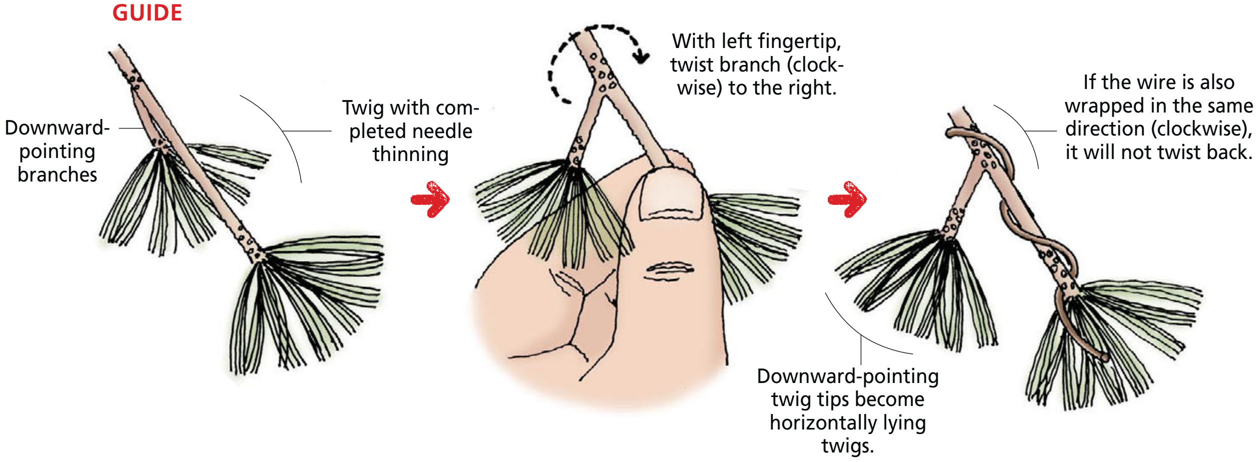
NEEDLE-REMOVING GUIDE


Use tweezers with a strong spring.
Holding the base of the needle, remove one needle at a time.
Index finger
For experienced caretakers, doing this by hand is acceptable.
Pinch the base of the needle and pull it out.
Thumb
FOR INEXPERIENCED CARETAKERS
Cut off the needle with scissors, keeping only its base.

ADJUSTING THE BENT TRUNK

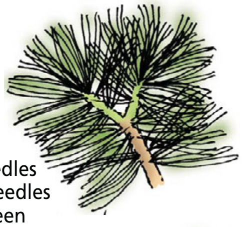

Long, monotonous trunk
Trunk
Wrap the branch with electrical or grafting tape.
Bend the branch by hand.
The tree height is reduced.
A sharp bend is possible.
Affix with a wire. (Leave it for about a year.)

WIRING DISTRIBUTION GUIDE

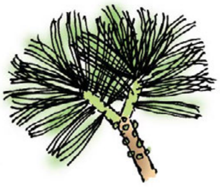

Downward-pointing branches
Twig with completed needle thinning
With left fingertip, twist branch (clockwise) to the right.
If the wire is also wrapped in the same direction (clockwise), it will not twist back.
Downward-pointing twig tips become horizontally lying twigs.

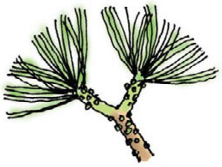
NEEDLE REMOVAL FOR DENSELY-GROWN BRANCH TIPS

Removal of old needles


Intermingling of old needles with new needles.

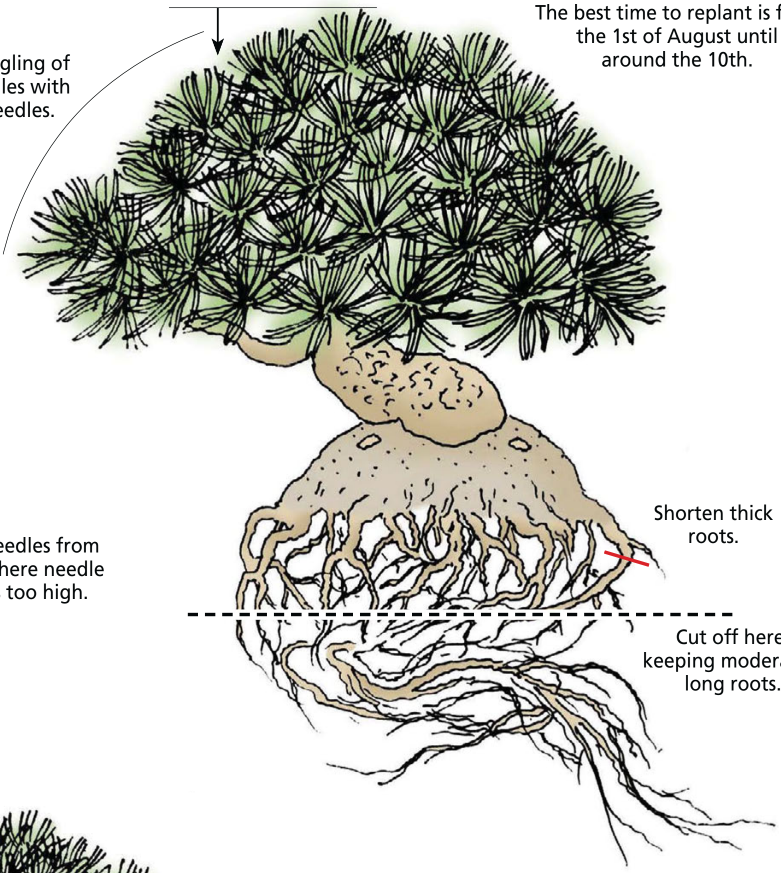
New needles and old needles have been accumulating.


Remove old needles.


Remove needles from this year where needle volume is too high.

REPLANTING IN SUMMER

The best time to replant is from the 1st of August until around the 10th.

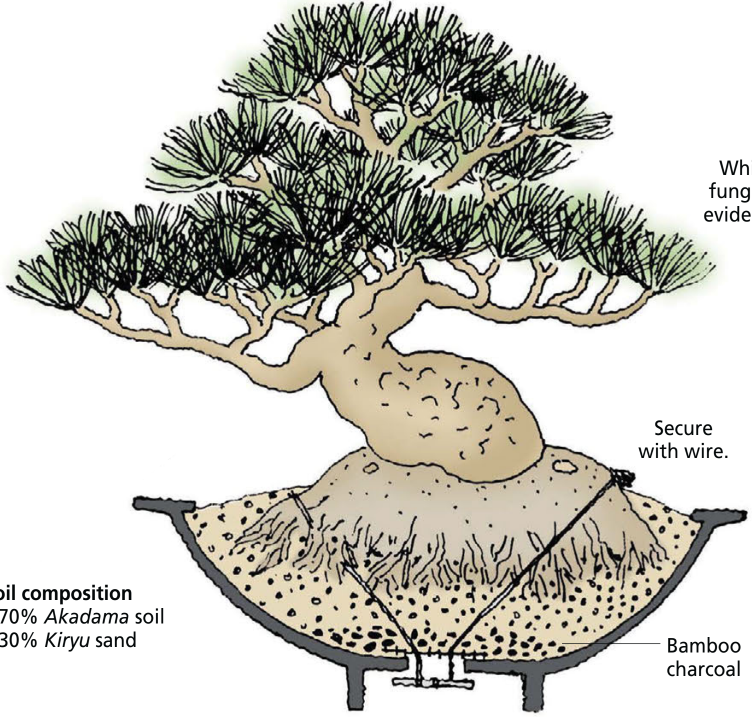


Shorten thick roots.

Cut off here, keeping moderately long roots.

PLANTING GUIDE

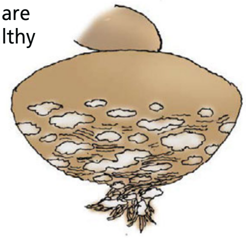
Branches and twigs are visible, with improved sunlight and interior airflow.

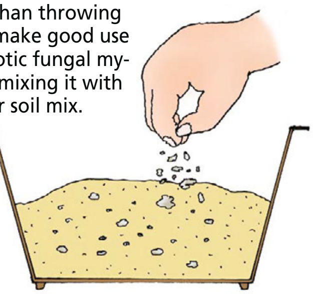


Soil composition

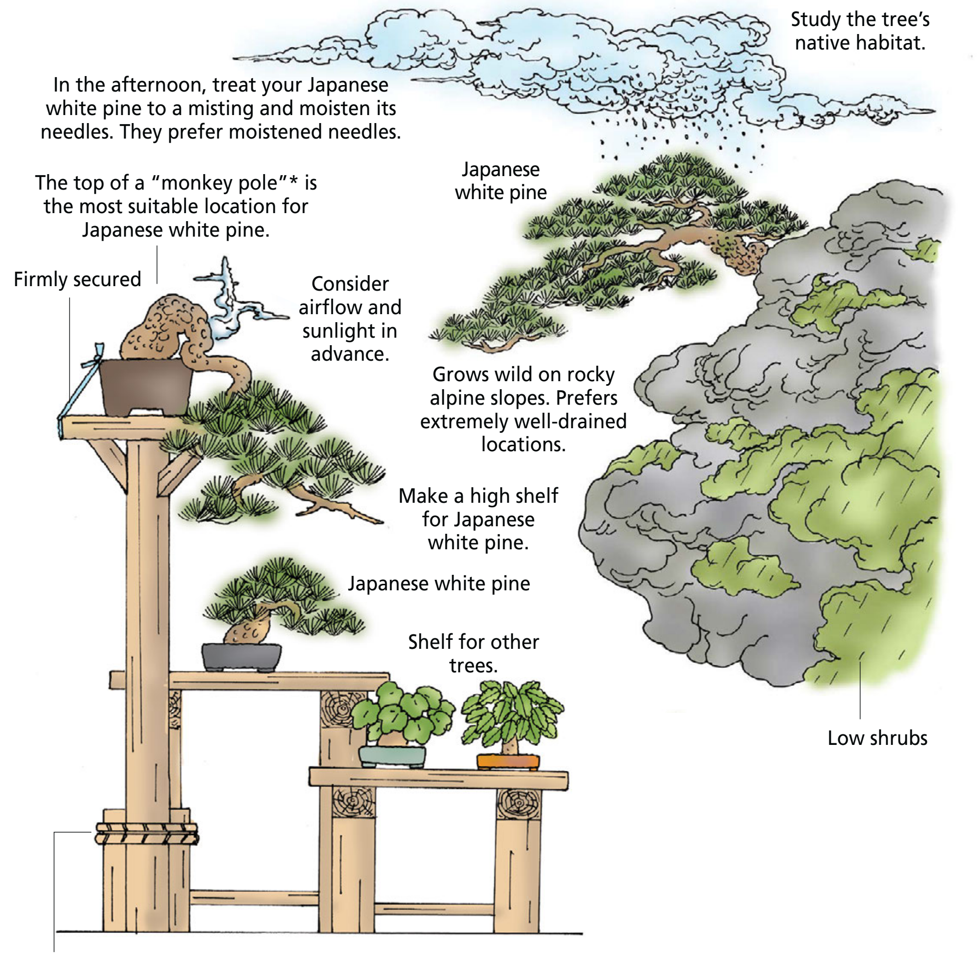
70% *Akadama* soil
30% *Kiryu* sand

PRACTICAL USE OF SYMBIOTIC FUNGAL MYCELIA


White symbiotic fungal mycelia are evidence of healthy growth.


Rather than throwing it away, make good use of symbiotic fungal mycelia by mixing it with your soil mix.

SITUATING YOUR BONSAI



Study the tree's native habitat.

In the afternoon, treat your Japanese white pine to a misting and moisten its needles. They prefer moistened needles.

The top of a "monkey pole"* is the most suitable location for Japanese white pine.

Japanese white pine

Firmly secured

Consider airflow and sunlight in advance.

Grows wild on rocky alpine slopes. Prefers extremely well-drained locations.

Make a high shelf for Japanese white pine.

Japanese white pine

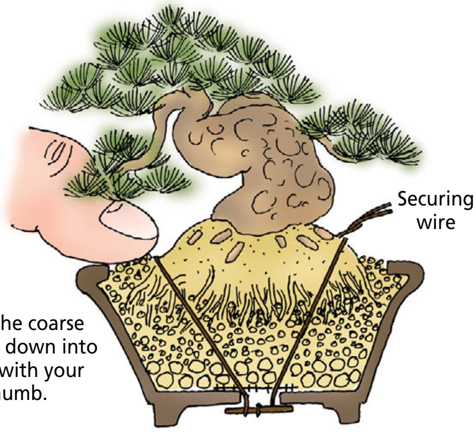
Shelf for other trees.

Low shrubs

Ensure that it will not fall.

PLANTING GUIDE

It is important to plant the Japanese white pine so it has good drainage.

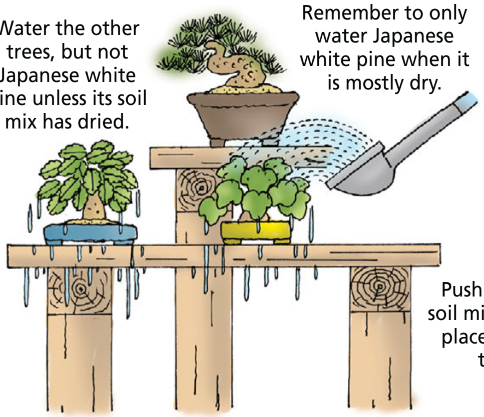


Securing wire

Push the coarse soil mix down into place with your thumb.

Soil composition
50% *Akadama* soil
50% *Kiryu* sand

WATERING



Water the other trees, but not Japanese white pine unless its soil mix has dried.

Remember to only water Japanese white pine when it is mostly dry.

*A "Monkey pole" is a bonsai stand on a high wooden pillar.

SCHEDULE

	Propagating	Watering	Fertilizing	Protection	Shaping	Sterilization	Transplanting	Growth State
January		Once a week		Protection room				Dormancy period
February	Grafting					Winter		
March	Seedling				Pruning			
April		Once daily	Add fertilizer				▨	Growth period
May					Bud picking			
June	Layering					Growth period		
July		2 times / day	Water & fertilizer					
August							▨	
September		Once daily	Add fertilizer					
October					Wiring			Prime
November								
December		▨		▨		Winter		▨

Temple Juniper

JAPANESE NAMES
Tosho, muro, nezu, nezumi sashi

ALTERNATIVE NAME
Needle juniper

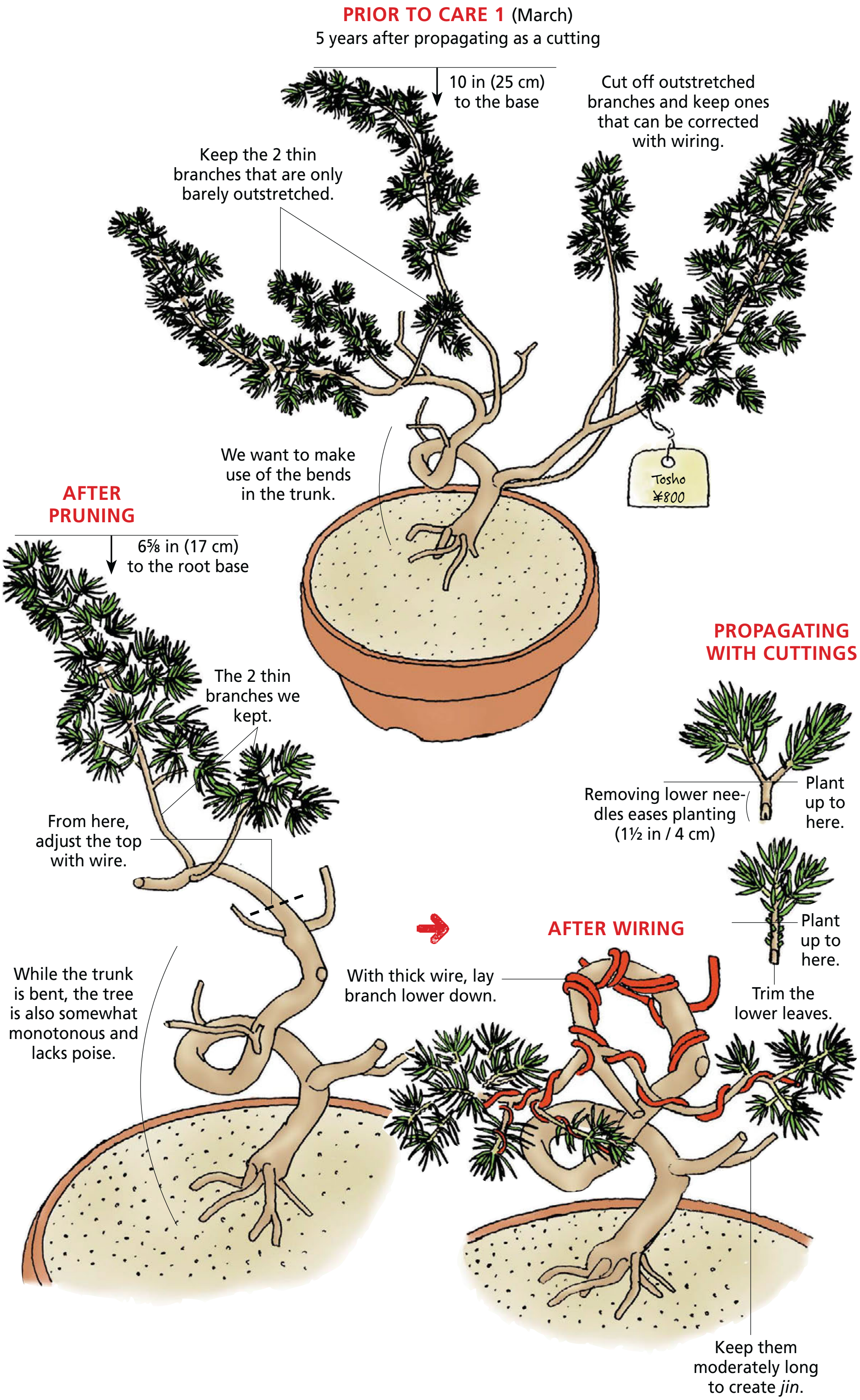
SCIENTIFIC NAME
Juniperus rigida

CLASSIFICATION
***Cupressaceae* (evergreen conifer / tree)**

SYMBOLIC OF
Protection, Salvation

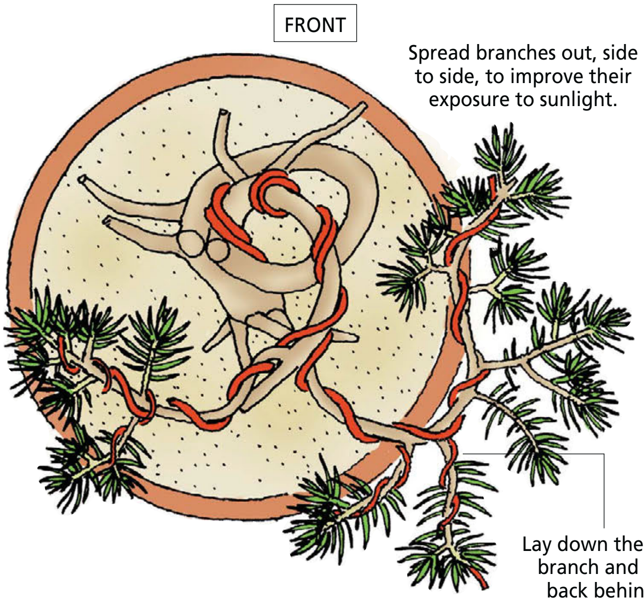
PEAK SEASON
October to November

Both juniper and dwarf juniper are easily trained. The wood is dense and rot-resistant, so *shari* and *jin* are often created, and beautifully so. Because it is difficult to create a taper in the trunk, let the lower branches grow out naturally, which will help thicken the rise of the lower trunk. Propagating is with cuttings and air-layering.


PRIOR TO CARE 1 (March)
5 years after propagating as a cutting
10 in (25 cm) to the base
Cut off outstretched branches and keep ones that can be corrected with wiring.
Keep the 2 thin branches that are only barely outstretched.
We want to make use of the bends in the trunk.
Tosho
¥800
AFTER PRUNING
6⅝ in (17 cm) to the root base
The 2 thin branches we kept.
From here, adjust the top with wire.
While the trunk is bent, the tree is also somewhat monotonous and lacks poise.
AFTER WIRING
With thick wire, lay branch lower down.
Keep them moderately long to create *jin*.
PROPAGATING WITH CUTTINGS
Removing lower needles eases planting (1½ in / 4 cm)
Plant up to here.
Plant up to here.
Trim the lower leaves.

*There is a species of tree called "shore juniper" (*Juniperus conferta*) that has been popular for some time. It is characterized by plump needles in dense clusters that are not as painfully prickly to the touch as some other species of juniper.*

AFTER WIRING (VIEWED FROM ABOVE)

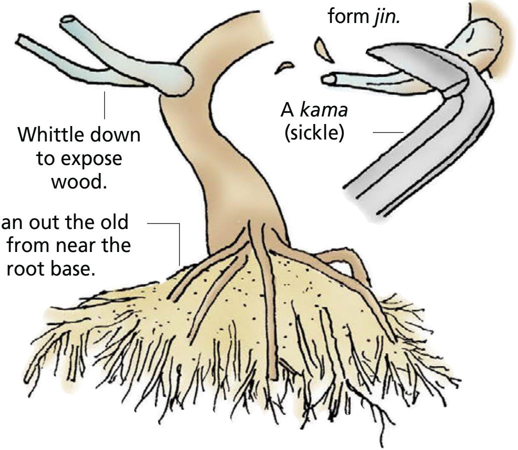


Spread branches out, side to side, to improve their exposure to sunlight.

Lay down the upright branch and turn it back behind the main trunk.

ROOT SHORTENING

MAKING THE *JIN*



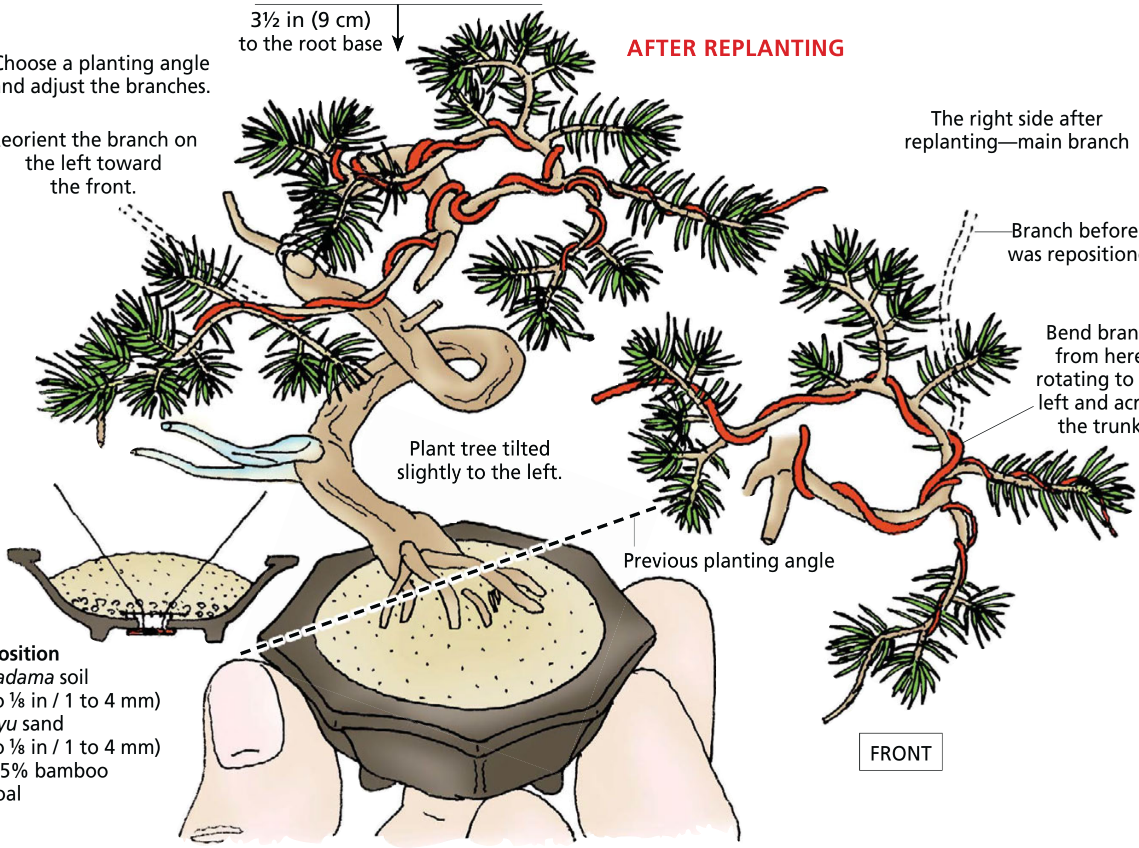
Utilize remnants of cut-off branches to form *jin.*

Whittle down to expose wood.

Clean out the old soil from near the root base.

Keep long roots trimmed short to make a roughly level base.

AFTER REPLANTING


3½ in (9 cm) to the root base
FRONT

Choose a planting angle and adjust the branches.

Reorient the branch on the left toward the front.

Plant tree tilted slightly to the left.

Previous planting angle

The right side after replanting—main branch

Branch before it was repositioned

Bend branch from here, rotating to the left and across the trunk.

Soil composition

80% *Akadama* soil
(1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand
(1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

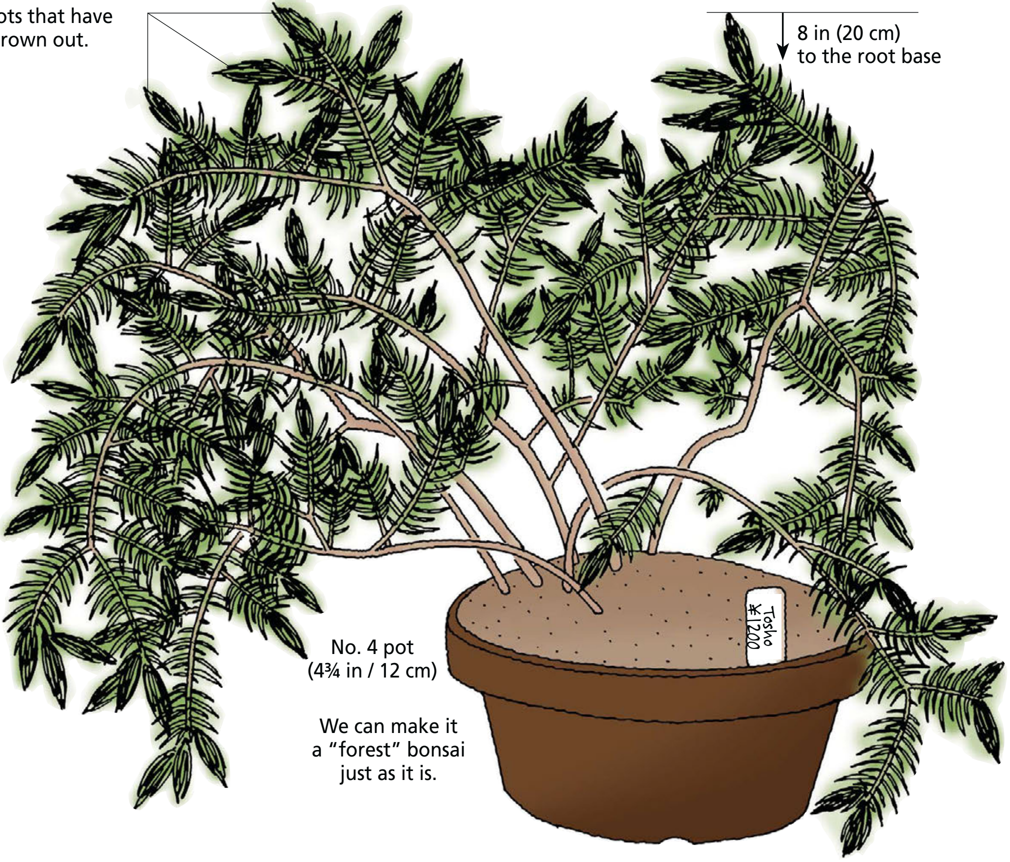
PRIOR TO CARE 2

(May)

This bonsai was propagated from a cutting 3 to 4 years ago. Because this species naturally droops as it grows, train each trunk with wire to establish bends.

Pinch off all the new shoots that have grown out.

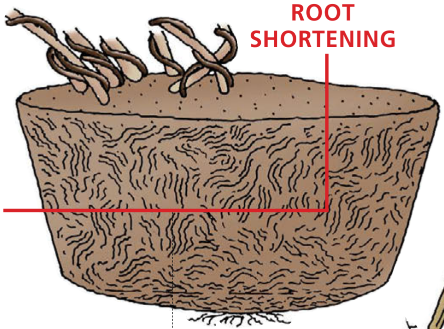
8 in (20 cm) to the root base



No. 4 pot (4¾ in / 12 cm)

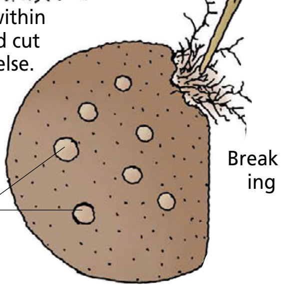
We can make it a "forest" bonsai just as it is.

ROOT SHORTENING



When removed from the pot, we see that the red roots have accumulated in every corner of it.

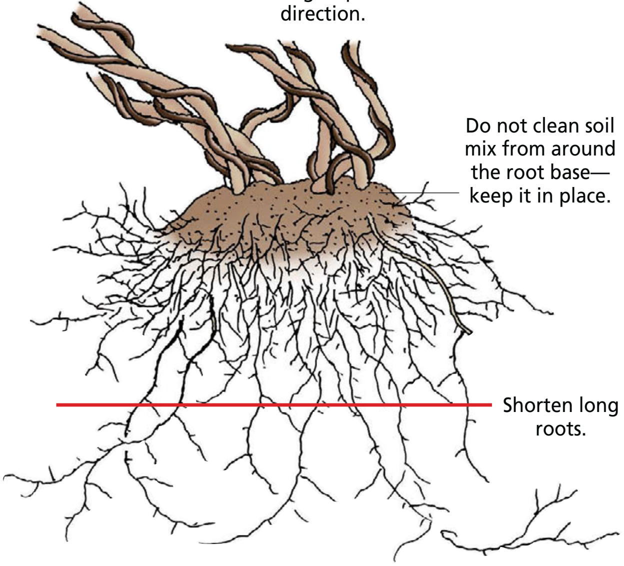
Keep the roots within the red lines and cut off everything else.



Break up the surrounding soil mix with a chopstick.

TRUNK WIRING

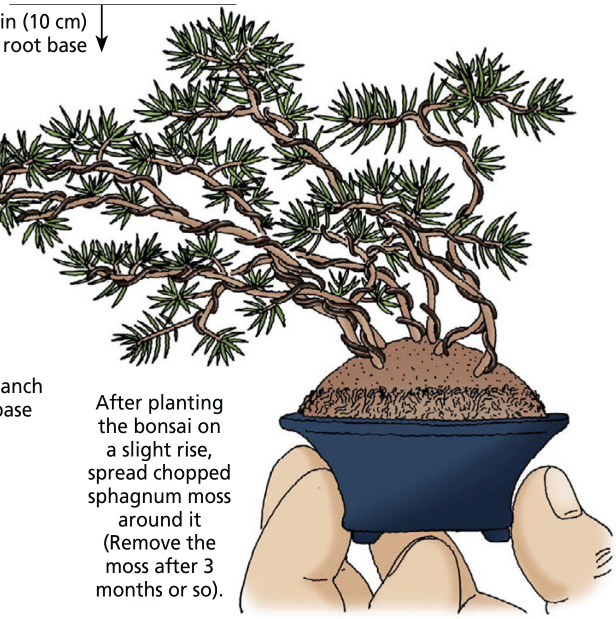
While bending each trunk, make sure the overall flow of the entire group is in one direction.



Do not clean soil mix from around the root base—keep it in place.

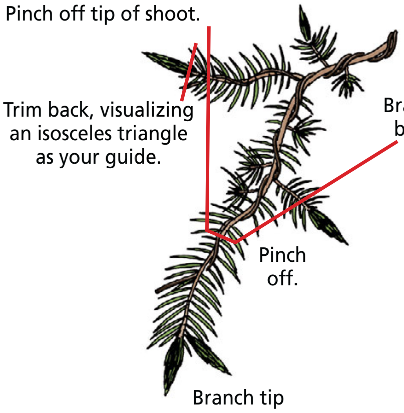
Shorten long roots.

AFTER PLANTING

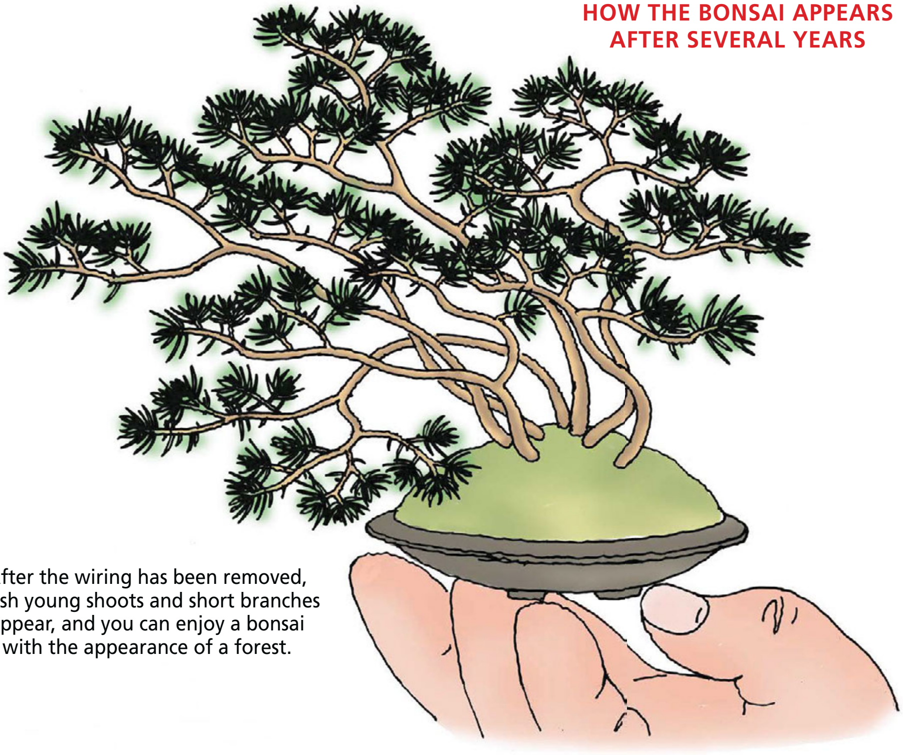

4 in (10 cm)
to the root base

After planting the bonsai on a slight rise, spread chopped sphagnum moss around it (Remove the moss after 3 months or so).

PRUNING


Pinch off tip of shoot.
Trim back, visualizing an isosceles triangle as your guide.
Branch base
Pinch off.
Branch tip

HOW THE BONSAI APPEARS AFTER SEVERAL YEARS



After the wiring has been removed, fresh young shoots and short branches appear, and you can enjoy a bonsai with the appearance of a forest.

SCHEDULE

	January	February	March	April	May	June	July	August	September	October	November	December
Propagating				Cutting • Layering (June–July)								
Watering	1–2 times/week			2–3 times/day			3–4 times / day		2–3 times/day			
Fertilizing				Add fertilizer			Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping				Pruning	Bud picking							
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period						Prime		

Japanese Cedar

JAPANESE NAME
Sugi

ALTERNATIVE NAMES
n/a

SCIENTIFIC NAME
Cryptomeria japonica

CLASSIFICATION
***Cupressaceae* (evergreen conifer / tree)**

SYMBOLIC OF
Magnificence, Strength

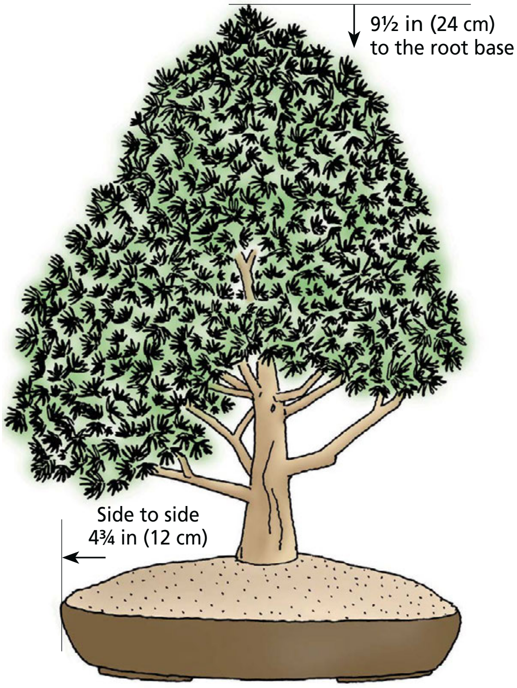
PEAK SEASON
October to November

A conifer native to Japan, These trees have a powerful potential for germinating. The new buds grow gradually until autumn, at which time they can be pinched off. When water and nutrients are scarce, the tree loses strength and the color of its needles becomes pale. Although cold-resistant, being sheltered somewhere not exposed to dry winter winds is essential. Propagating with cuttings is recommended.

PRIOR TO CARE (March)

8 years after being propagated as a cutting

Repeatedly pinching off buds make branches seem hidden, resulting in a tree that appears lumpy and undefined.

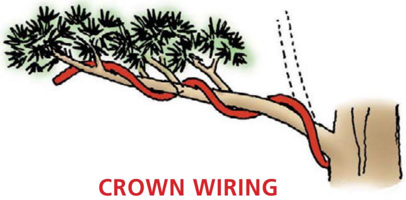


9½ in (24 cm) to the root base

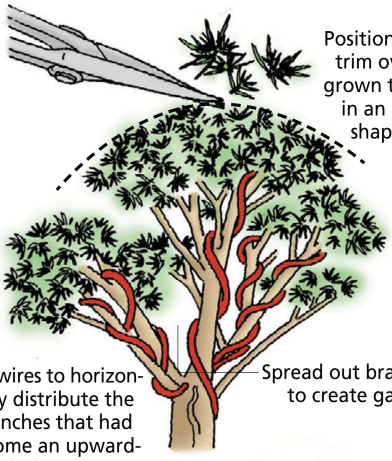
Side to side 4¾ in (12 cm)

WIRING BRANCHES

Lay down any upright branches horizontally.



CROWN WIRING

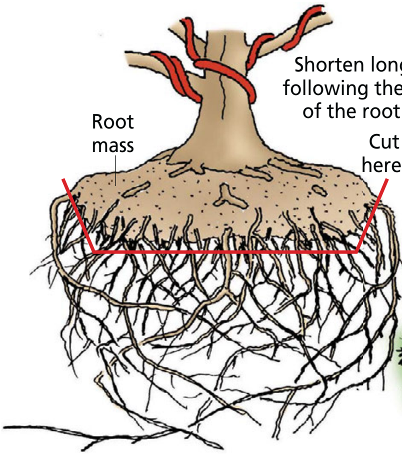


Position and trim overgrown twigs in an arc shape.

Use wires to horizontally distribute the branches that had become an upward-pointing mass.

Spread out branches to create gaps.

ROOT SHORTENING

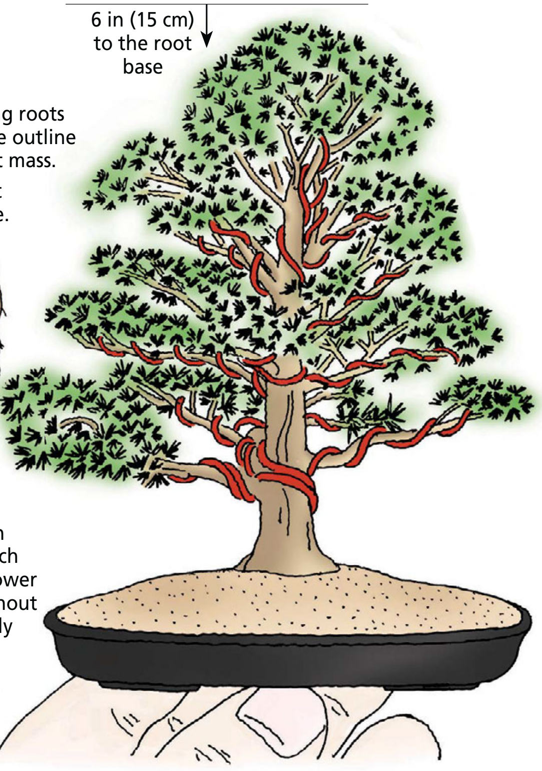


Root mass

Shorten long roots following the outline of the root mass.

Cut here.

AFTER REPLANTING

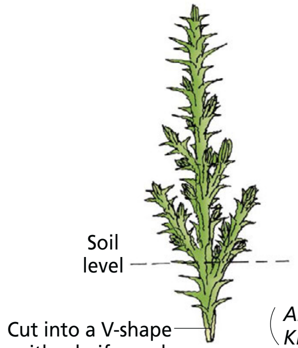


6 in (15 cm) to the root base

Clearly show spaces between branches by laying every branch horizontally, starting with the lower branches. Shorten twigs throughout so that they become uniformly shorter.

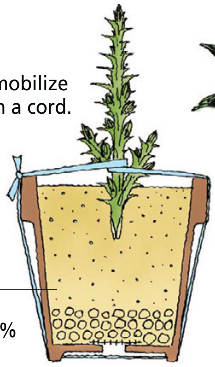
PROPAGATING WITH CUTTINGS

If you plant the top of a tree you had trimmed as a cutting for propagation, the cutting will grow straight.



Cut into a V-shape with a knife, and then plant.

WHEN PLANTED

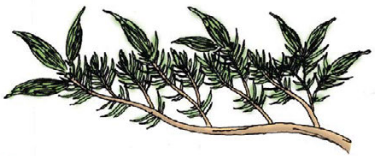


Immobilize with a cord.

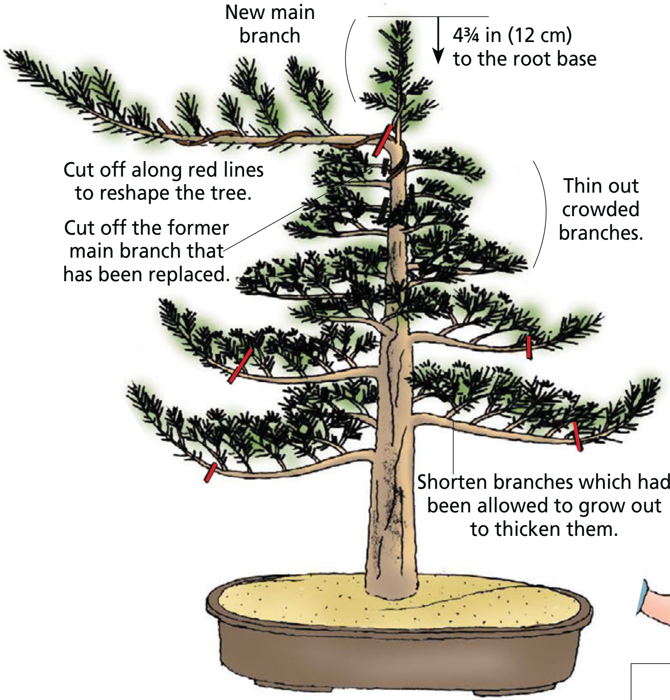
Akadama soil 70%
Kiryu sand 30%

PINCHING OFF BUDS

(May)



Pinch off grown buds from between clusters. If they have grown too much, prune back with scissors.



New main branch

4¾ in (12 cm) to the root base

Cut off along red lines to reshape the tree.

Cut off the former main branch that has been replaced.

Thin out crowded branches.

Shorten branches which had been allowed to grow out to thicken them.

Exchange the deep bowl for a shallow pot.

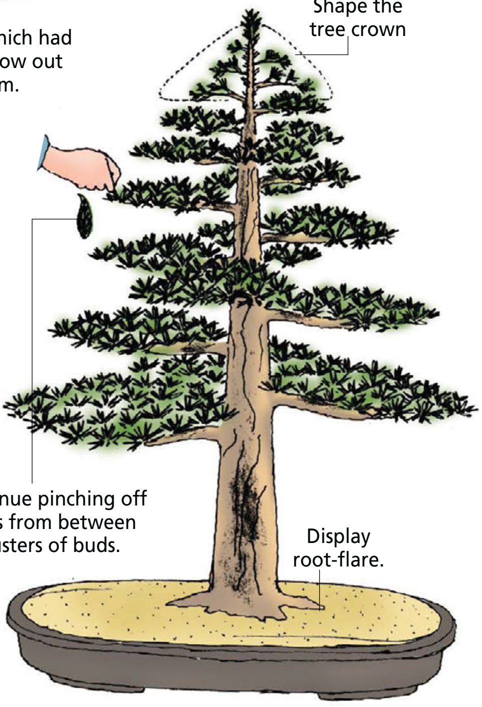
PRUNING (April)

10 years after being propagated as a cutting

HOW THE BONSAI APPEARS SEVERAL YEARS AFTER REPLANTING

PINCHING OFF BUDS

(April to October)



Shape the tree crown

Continue pinching off buds from between clusters of buds.

Display root-flare.

Plant in shallow pot.

SCHEDULE	January	February	March	April	May	June	July	August	September	October	November	December
Propagating			Seedling	Cutting		Cutting • Layering						
Watering	1–2 times / week			1–2 times / day			2–3 times / day		1–2 times / day			
Fertilizing					Add fertilizer		Water & fertilizer		Add fertilizer			
Protection	Protection room						Shading					
Shaping			Pruning		Bud picking							
Sterilization		Winter			Growth period							Winter
Transplanting												
Growth State	Dormancy period			Growth period						Prime		

Chinese Juniper

JAPANESE NAMES
Miyama-byakushin*, *shinpaku

ALTERNATIVE NAME
True Japanese emperor oak*

SCIENTIFIC NAME
Sabina chinensis

CLASSIFICATION
***Cupressaceae* (evergreen conifer / shrub)**

SYMBOLIC OF
Self-protection

PEAK SEASON
October to November (dormant period)

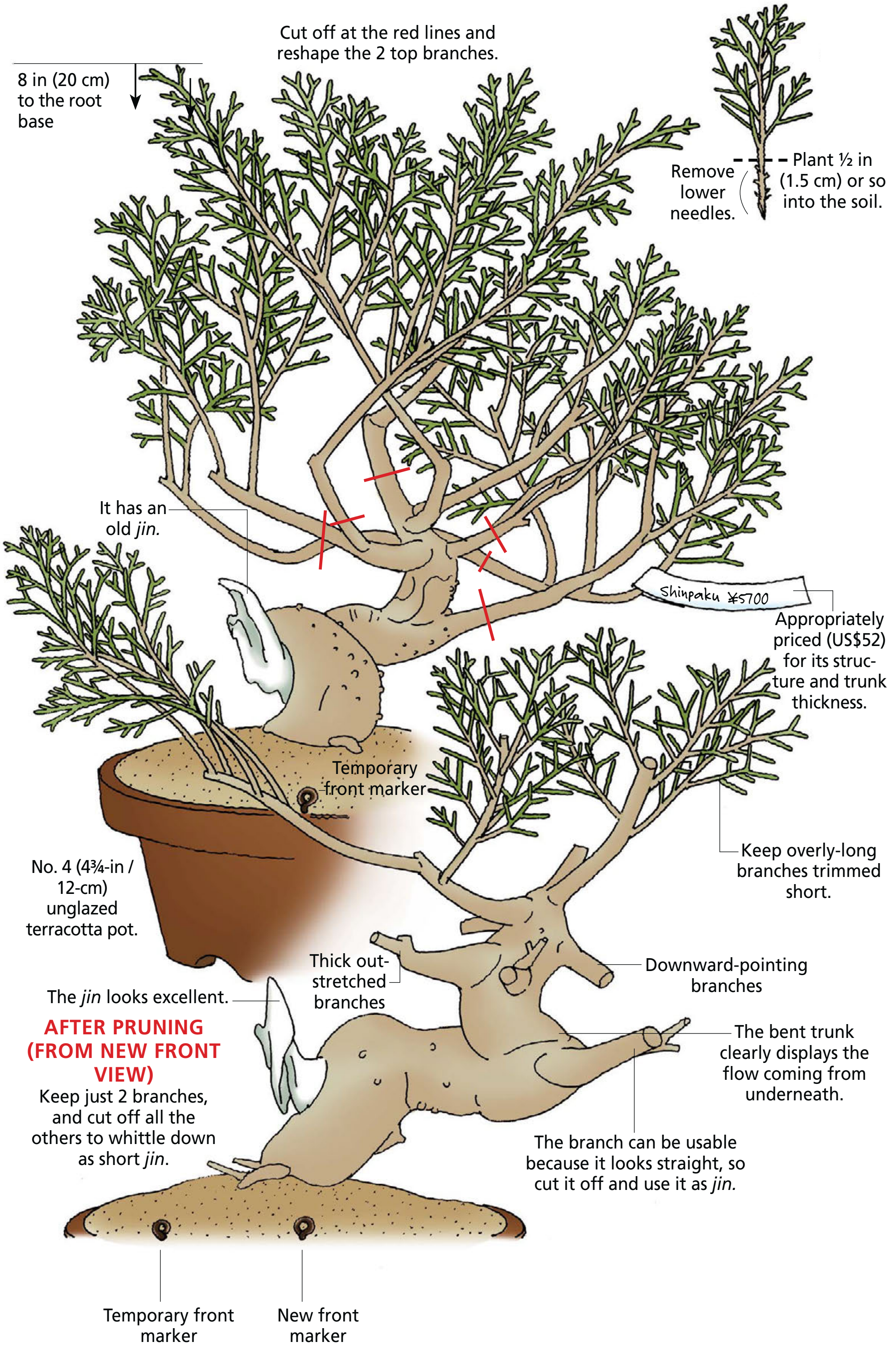
The trunk appears to be twisting as it grows, and the branches have extended out horizontally. The tree prefers a weak alkaline soil mix, so provide smoked charcoal or similar once a year to prevent acidification. The wood is rot-resistant, so *shari* and *jin* develop beautifully. New buds grow gradually until autumn, and at that time they can be pinched off. Propagation is with cuttings.

PRIOR TO CARE (NOTE TEMPORARY FRONT MARKER)

(March)
12 years after being propagated as a cutting

PROPAGATING WITH CUTTINGS

Plant your pruned branches rather than throwing them away.



8 in (20 cm) to the root base

Cut off at the red lines and reshape the 2 top branches.

Remove lower needles.

Plant ½ in (1.5 cm) or so into the soil.

It has an old *jin*.

Appropriately priced (US$52) for its structure and trunk thickness.

Temporary front marker

No. 4 (4¾-in / 12-cm) unglazed terracotta pot.

Keep overly-long branches trimmed short.

Thick outstretched branches

Downward-pointing branches

The *jin* looks excellent.

AFTER PRUNING (FROM NEW FRONT VIEW)

Keep just 2 branches, and cut off all the others to whittle down as short *jin*.

The bent trunk clearly displays the flow coming from underneath.

The branch can be usable because it looks straight, so cut it off and use it as *jin*.

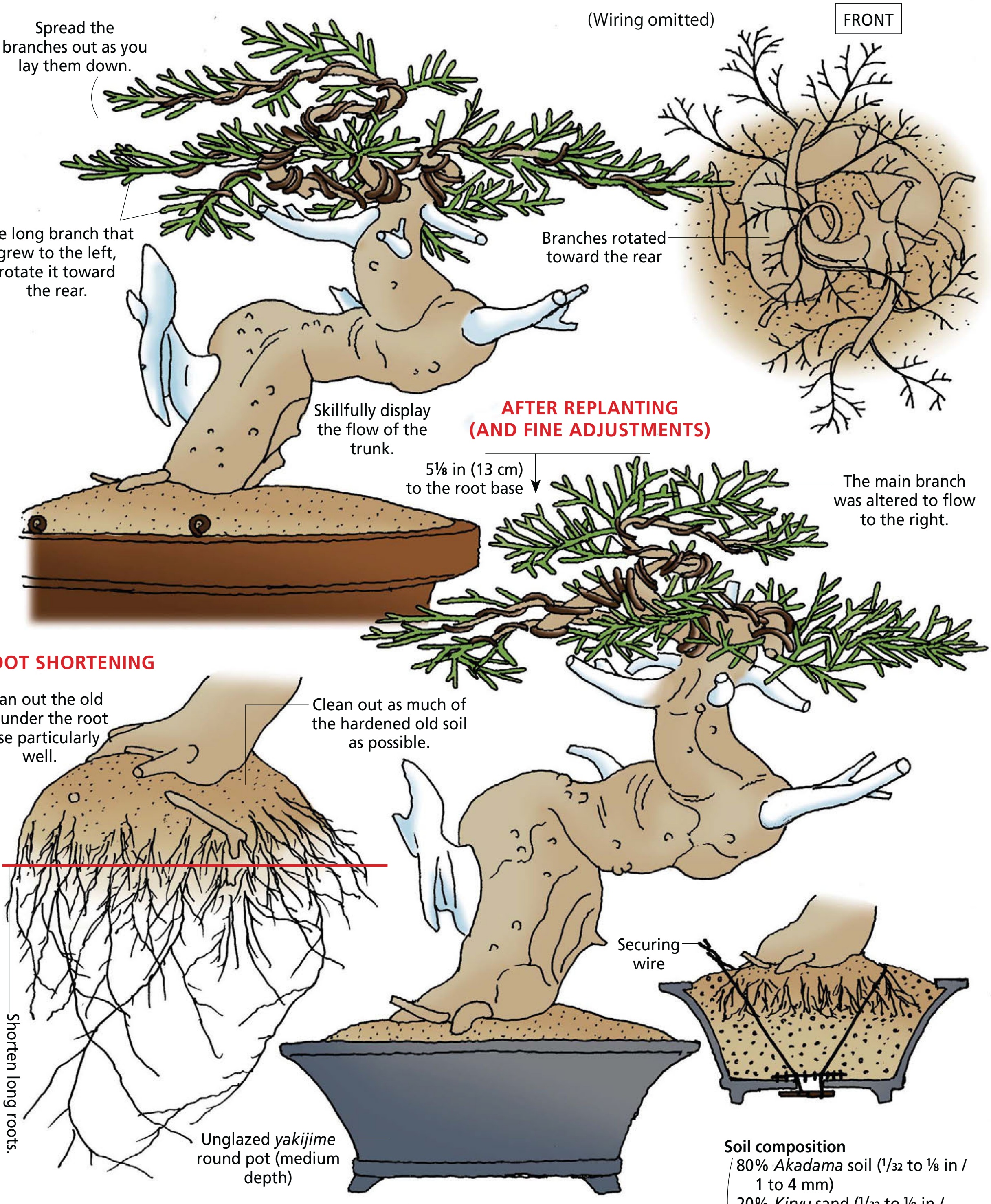
Temporary front marker

New front marker

**True Japanese emperor oak: In the bonsai world, this colloquial name is becoming popular.*

AFTER WIRING

LAYOUT OF BRANCHES (VIEWED FROM ABOVE)



(Wiring omitted)

FRONT

Spread the branches out as you lay them down.

The long branch that grew to the left, rotate it toward the rear.

Branches rotated toward the rear

Skillfully display the flow of the trunk.

AFTER REPLANTING (AND FINE ADJUSTMENTS)

5⅛ in (13 cm) to the root base

The main branch was altered to flow to the right.

ROOT SHORTENING

Clean out the old soil under the root base particularly well.

Clean out as much of the hardened old soil as possible.

Shorten long roots.

Securing wire

Unglazed *yakijime* round pot (medium depth)

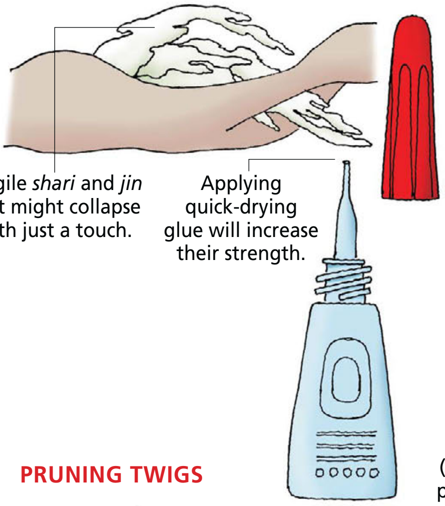
Soil composition

80% *Akadama* soil (1/32 to ⅛ in / 1 to 4 mm)
20% *Kiryu* sand (1/32 to ⅛ in / 1 to 4 mm)
+ about 5% bamboo charcoal

SCHEDULE

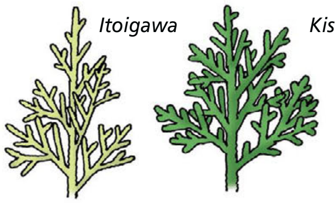
	Growth State	Transplanting	Sterilization	Shaping	Protection	Fertilizing	Watering	Propagating
January	Dormancy period				Protection room		Once a week	
February			Winter					
March				Pruning				Cutting
April	Growth period					Add fertilizer	1–2 times / day	
May				Bud picking				
June			Growth period					Cutting
July					Shading	Water & fertilizer	2–3 times / day	
August								
September				Wiring		Add fertilizer	1–2 times / day	
October	Prime							
November								
December			Winter					

APPLICATION OF QUICK-DRYING GLUE

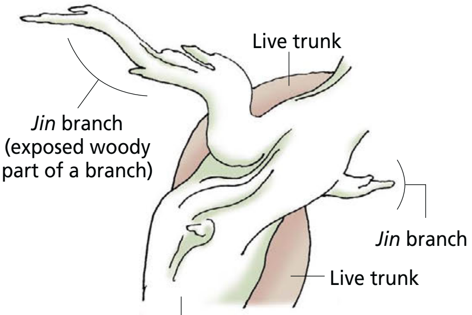

Fragile *shari* and *jin* that might collapse with just a touch.
Applying quick-drying glue will increase their strength.

ITOIGAWA AND KISHU CHINESE JUNIPER CULTIVARS

Comparing needles

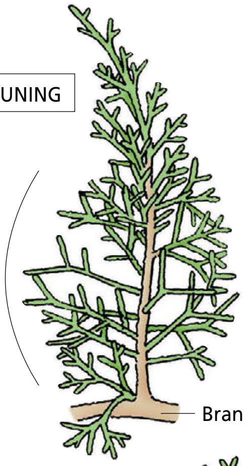

Itoigawa
Kishu
Needles are thin and yellowish green
Needles are plump and dark green

SHARI TRUNK AND *JIN* BRANCH

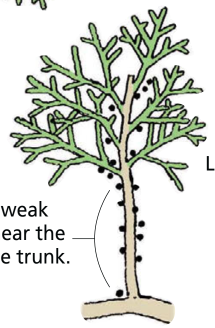

Live trunk
Jin branch (exposed woody part of a branch)
Jin branch
Live trunk
Shari trunk (exposed woody part of a trunk)

PRUNING TWIGS

BEFORE PRUNING

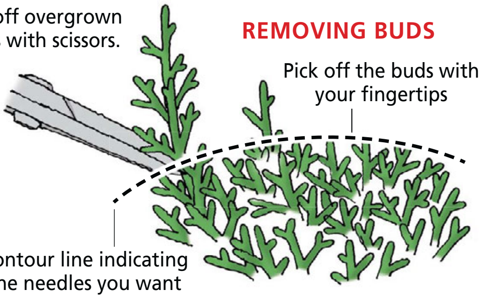

Twigs
Branch

AFTER PRUNING

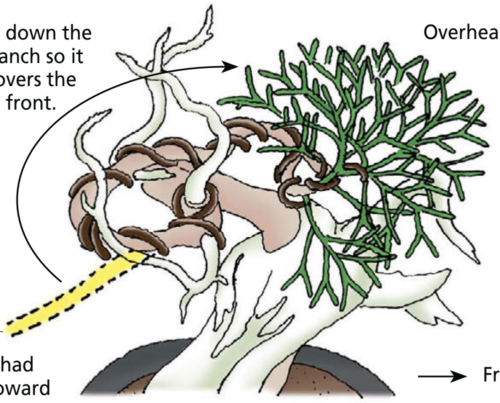

Cut off weak needles near the base of the trunk.

Black dots indicate where needles were cut off.

REMOVING BUDS


Cut off overgrown buds with scissors.
Pick off the buds with your fingertips
Contour line indicating the needles you want to keep.

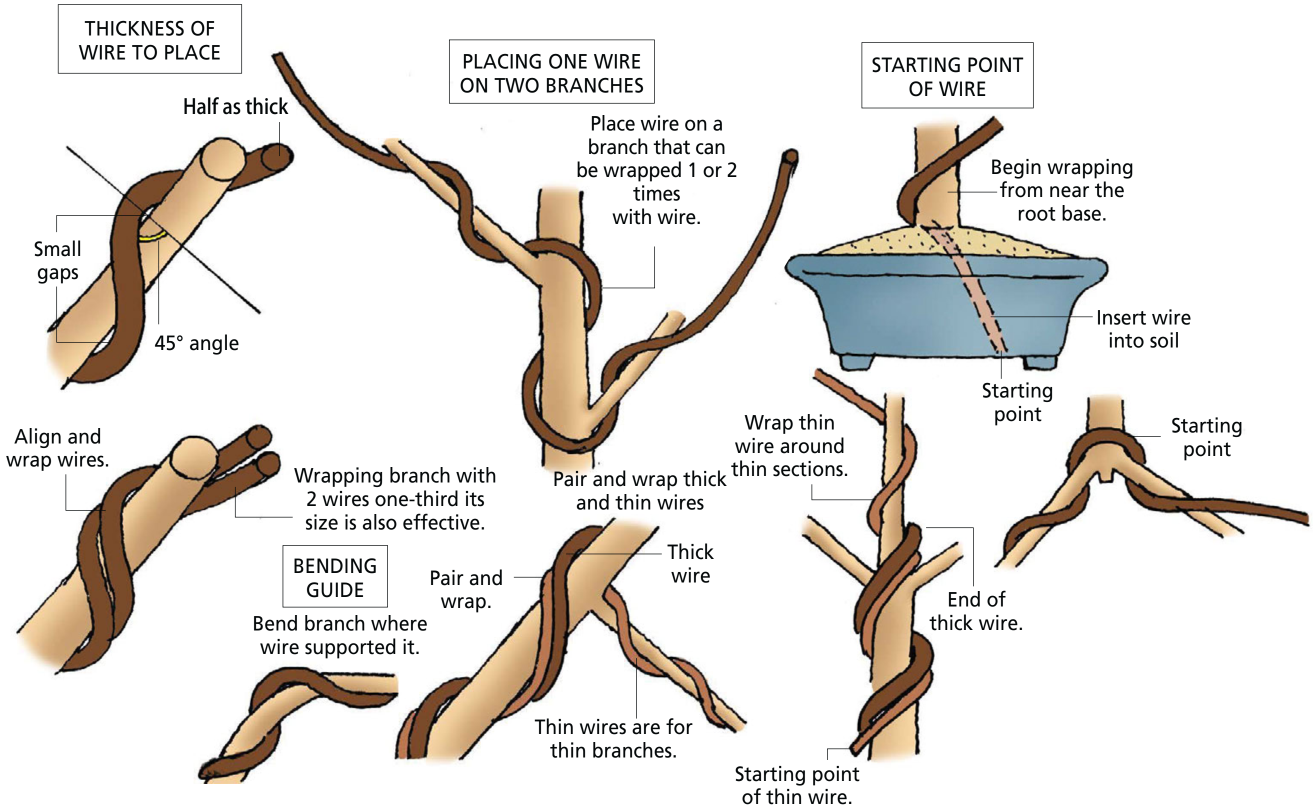
LAYING DOWN BRANCHES FOR COVER


Overhead view
Lay down the branch so it covers the front.
A branch that had been growing toward the back.
Front

Pruning, Shaping and Shaving Bonsai

With bonsai—unlike potted plants—we can enjoy the look of a large, old tree, even though the plants are small. Toward that end, care suitable to each species is vital.

WIRING

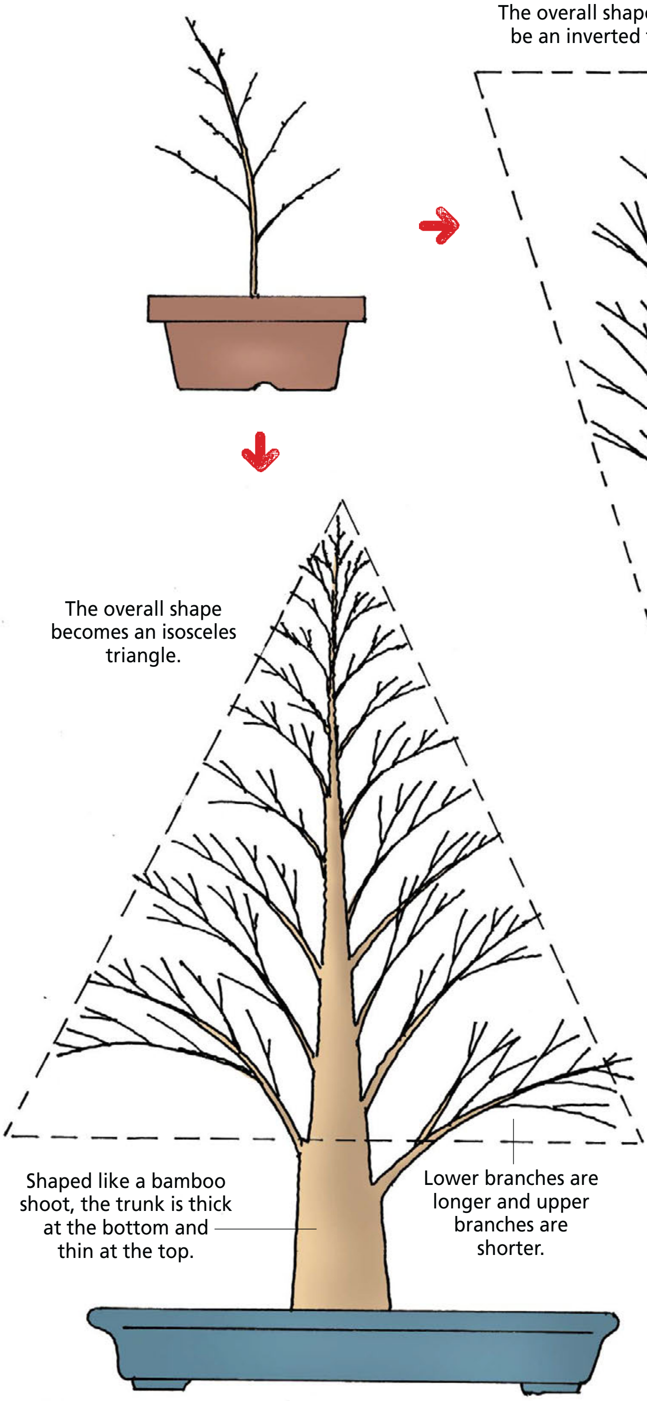

THICKNESS OF WIRE TO PLACE
Half as thick
Small gaps
45° angle
Align and wrap wires.
Wrapping branch with 2 wires one-third its size is also effective.
BENDING GUIDE
Bend branch where wire supported it.
PLACING ONE WIRE ON TWO BRANCHES
Place wire on a branch that can be wrapped 1 or 2 times with wire.
Pair and wrap thick and thin wires
Pair and wrap.
Thick wire
Thin wires are for thin branches.
STARTING POINT OF WIRE
Begin wrapping from near the root base.
Insert wire into soil
Starting point
Wrap thin wire around thin sections.
End of thick wire.
Starting point of thin wire.
Starting point

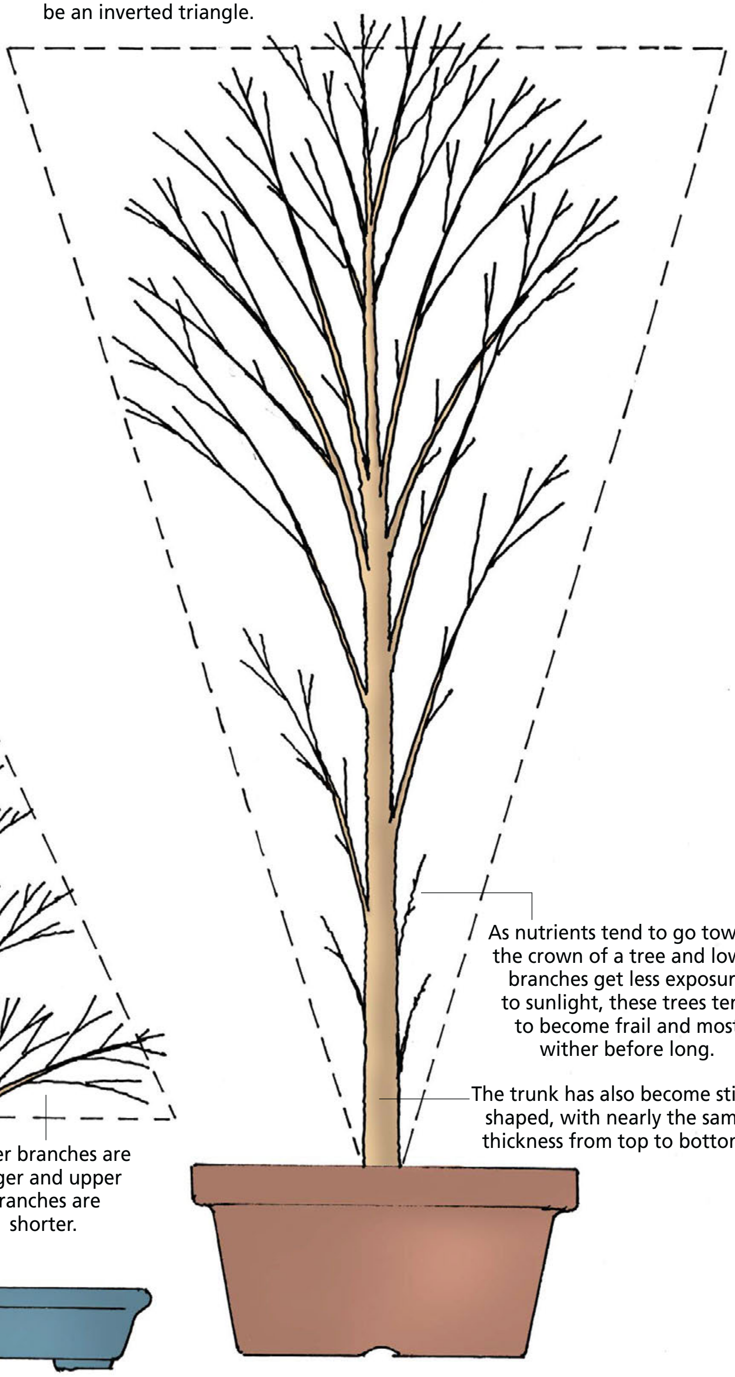
CARE AND TECHNIQUES THAT REVEAL THE EXCELLENCE OF THE TREE

Some bonsai care techniques that are clearly different from those for other garden plants are that branches may be bent with wire or parts of the trunk may be whittled with a blade. One of the most important elements of bonsai viewing is the appreciation for the beauty of the transformations in the tree that have resulted from the passage of time in a harsh natural environment. In order to emphasize that beauty, the branches and trunk are intentionally made to look as if they have been bent by the forces of wind and the weight of snow. Also, some trees may be altered to display sections of bark that have peeled off. These are created as *shari*, in the case of sections of trunk, and as *jin*, in the case of the branches.

Also, in bonsai, newly-grown tips of branches are cut in summer while branches and leaves are cut short during the dormant season from autumn to early spring—pruning, in other words. This is done with the aim of presenting a small tree with the appearance of a grand old tree, but one that does not have long, overgrown or spindly branches, or leaves that appear crowded. At its core, regular pruning is a method of steadily improving the appearance of the tree while keeping the bonsai small for long periods of time.

Why Do We Prune Bonsai?





SAPLING
(0 years)

WITHOUT PRUNING
(10 years later)

The overall shape tends to be an inverted triangle.

As nutrients tend to go toward the crown of a tree and lower branches get less exposure to sunlight, these trees tend to become frail and most wither before long.

The trunk has also become stick-shaped, with nearly the same thickness from top to bottom.

The overall shape becomes an isosceles triangle.

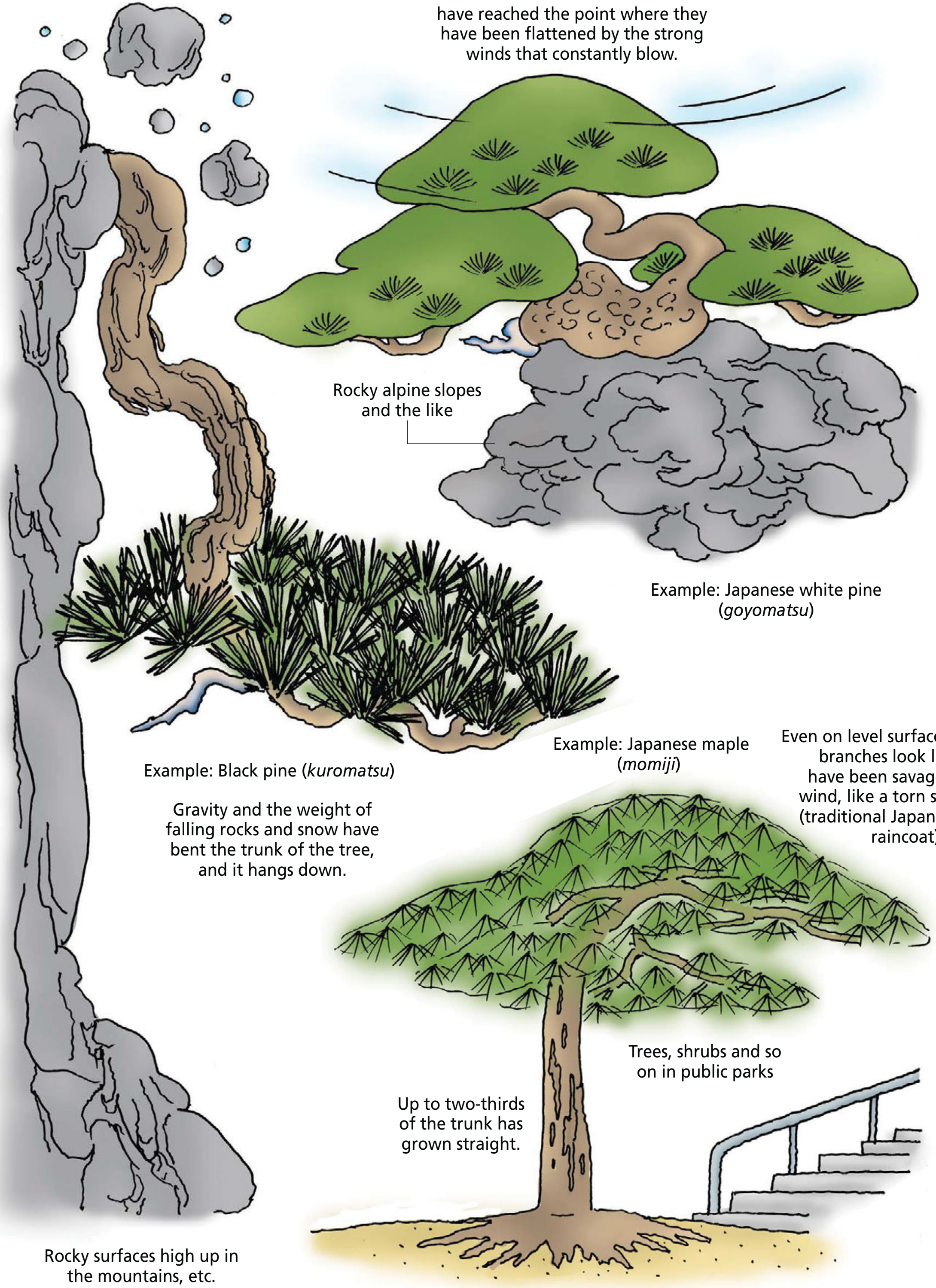
Shaped like a bamboo shoot, the trunk is thick at the bottom and thin at the top.

Lower branches are longer and upper branches are shorter.

WITH PRUNING
(10 years later)

Why Do We Bend and Shape Bonsai?

EXPRESS PERSEVERANCE AGAINST THE RIGORS OF NATURAL ENVIRONMENTS



The trunk and branches of the tree have reached the point where they have been flattened by the strong winds that constantly blow.

Rocky alpine slopes and the like

Example: Japanese white pine (*goyomatsu*)

Example: Black pine (*kuromatsu*)

Gravity and the weight of falling rocks and snow have bent the trunk of the tree, and it hangs down.

Example: Japanese maple (*momiji*)

Even on level surfaces, the upper branches look like they have been savaged by the wind, like a torn straw *mino* (traditional Japanese woven raincoat).

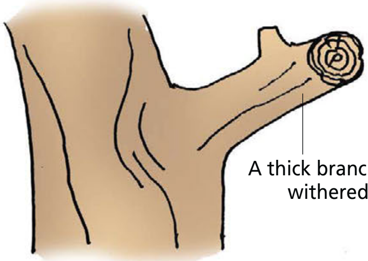
Trees, shrubs and so on in public parks

Up to two-thirds of the trunk has grown straight.

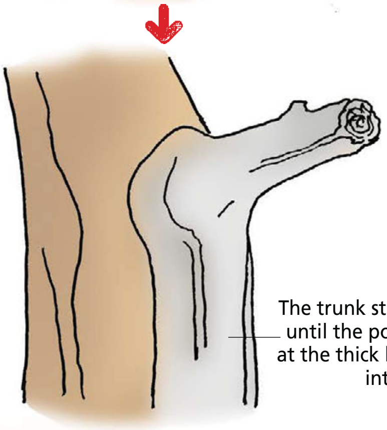
Rocky surfaces high up in the mountains, etc.

Why Do We Shave Bark from Bonsai?

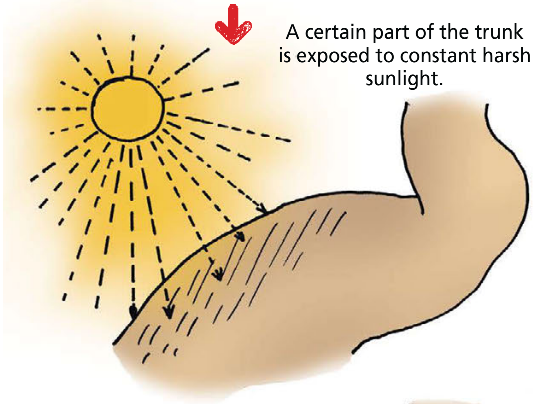
HOW SHARI IS CREATED IN NATURE



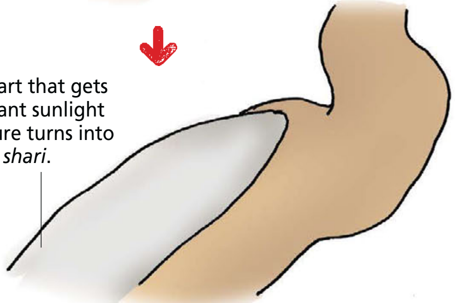
A thick branch has withered.



The trunk starts withering up until the point of withering at the thick branch, and turns into *shari*.

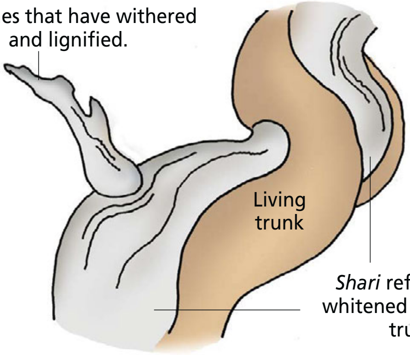


A certain part of the trunk is exposed to constant harsh sunlight.



The part that gets constant sunlight exposure turns into *shari*.

JIN AND *SHARI*



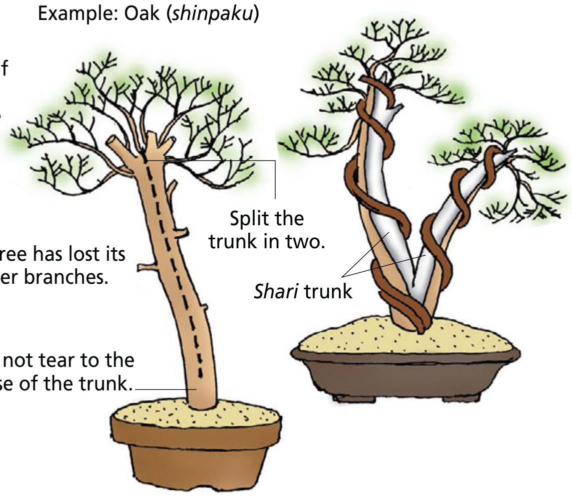
Jin refers to the white branches that have withered and lignified.

Living trunk

Shari refers to the whitened part of the trunk.

HOW TO CREATE A *JIN* AND *SHARI* ARRANGEMENT YOURSELF

Example: Oak (*shinpaku*)



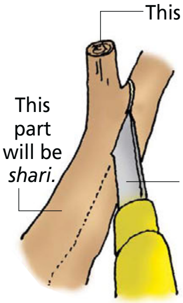
Put a notch at the top of the trunk and tear the trunk down the middle with your hands.

Split the trunk in two.

This tree has lost its lower branches.

Shari trunk

Do not tear to the base of the trunk.



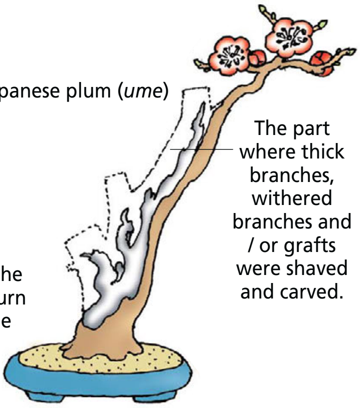
This part will be *jin*.

This part will be *shari*.

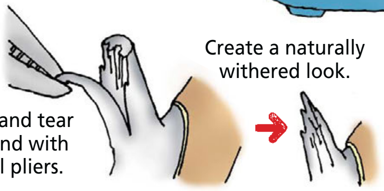
Chiseling knife

Cut and separate the part you want to turn into *shari* with the chiseling knife.

Example: Japanese plum (*ume*)



The part where thick branches, withered branches and / or grafts were shaved and carved.

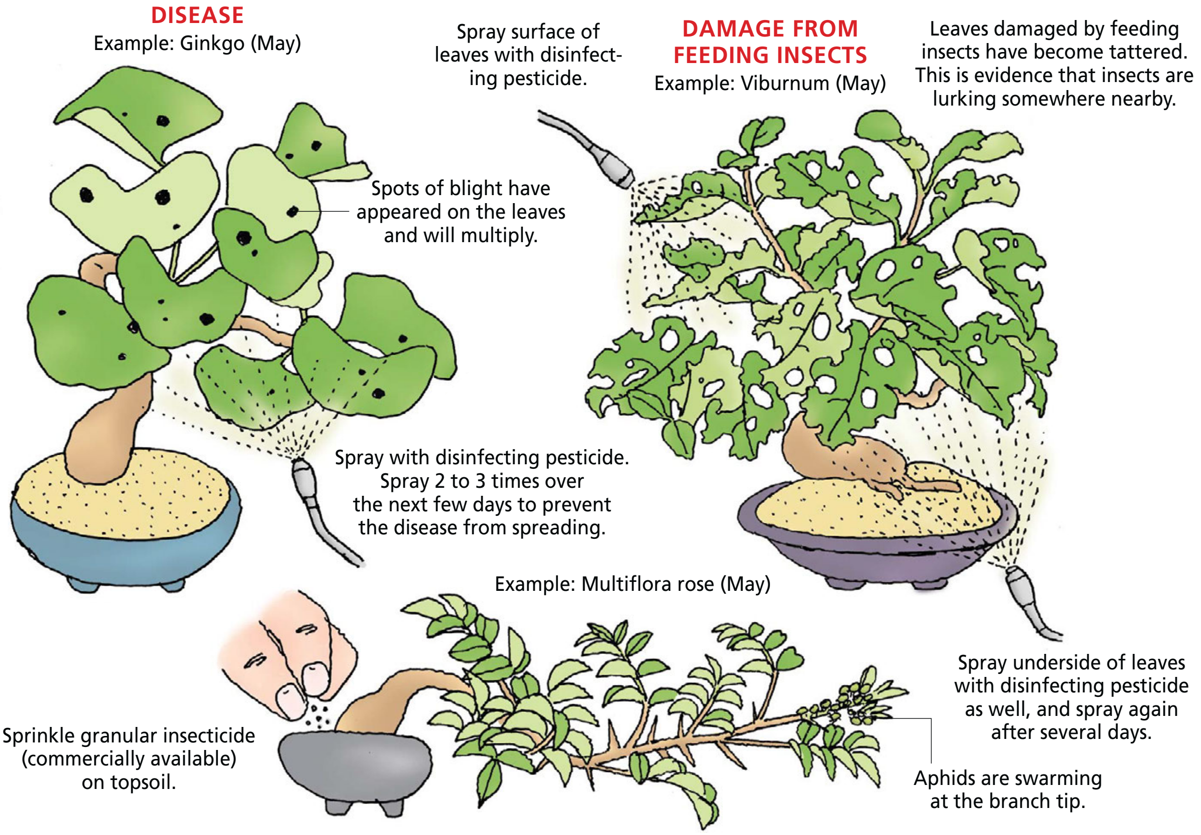


Grab and tear the end with small pliers.

Create a naturally withered look.

Maintaining Your Bonsai's Health

Similar to trees in their natural environment, even bonsai are constantly at risk from insects, pests and so on. Being knowledgeable about the countermeasures to such problems is essential for bonsai enthusiasts.



DISEASE
Example: Ginkgo (May)

Spots of blight have appeared on the leaves and will multiply.

Spray with disinfecting pesticide. Spray 2 to 3 times over the next few days to prevent the disease from spreading.

Spray surface of leaves with disinfecting pesticide.

DAMAGE FROM FEEDING INSECTS
Example: Viburnum (May)

Leaves damaged by feeding insects have become tattered. This is evidence that insects are lurking somewhere nearby.

Spray underside of leaves with disinfecting pesticide as well, and spray again after several days.

Example: Multiflora rose (May)

Sprinkle granular insecticide (commercially available) on topsoil.

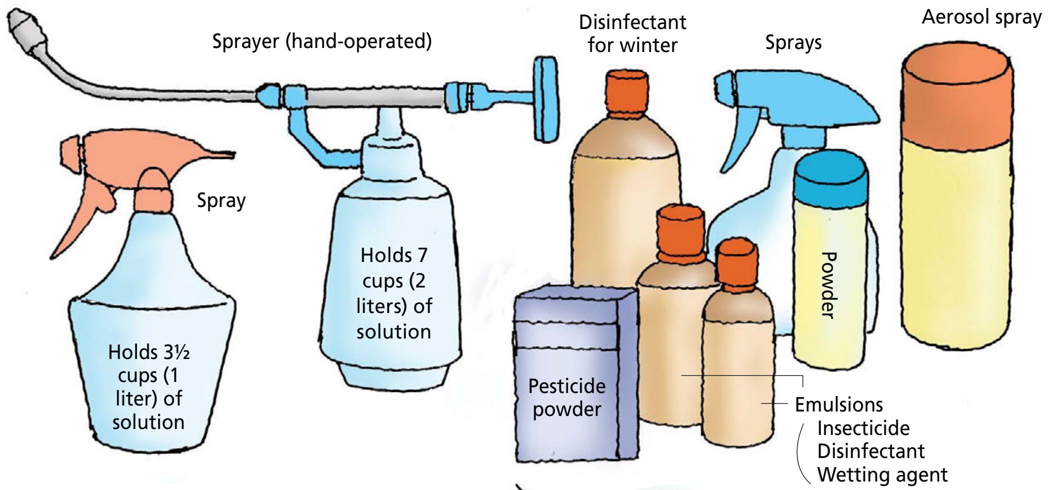
Aphids are swarming at the branch tip.

CAREFUL DETAILED OBSERVATIONS LEAD TO TAKING THE CORRECT ACTIONS

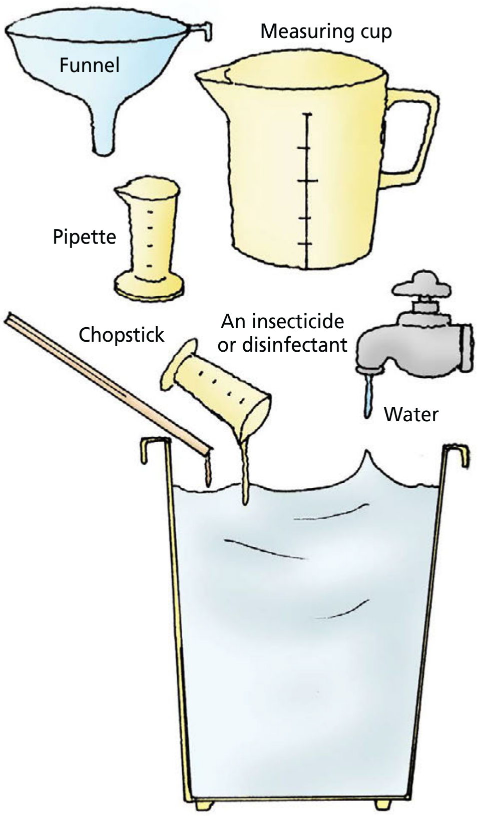
Throughout the spring and summer in particular, the activities of harmful insects become more vigorous, and outbreaks of pests and disease pose an increasing risk of damage. In order to protect your plants from damage from insects, from spring until autumn you should regularly treat your plants with a disinfecting pesticide and other treatments as a preventative measure.

However, it is difficult for beginners to distinguish these risks, and the most common misunderstanding is to mistake physical damage for pest damage. In the world of bonsai, there are often mystifying questions such as, "Why is my tree is not healthy?" or, "Why is the leaf color dull?" In the majority of cases what has happened to cause these symptoms is root rot appearing in the pot soil. The trouble is that in the case of root rot, symptom onset is slow and thus treatment tends to be delayed. For most pots in which these symptoms occur, the water administered to the bonsai is not draining through the pot. In addition, when the water given to the tree does not evaporate readily, this situation worsens until even the soil on the surface is damp. This is a sign that the soil environment inside the pot has deteriorated, and growing conditions for the roots have become poor. Swift transplanting is the essential response to this problem.

How to Weed and Kill Pests and Germs

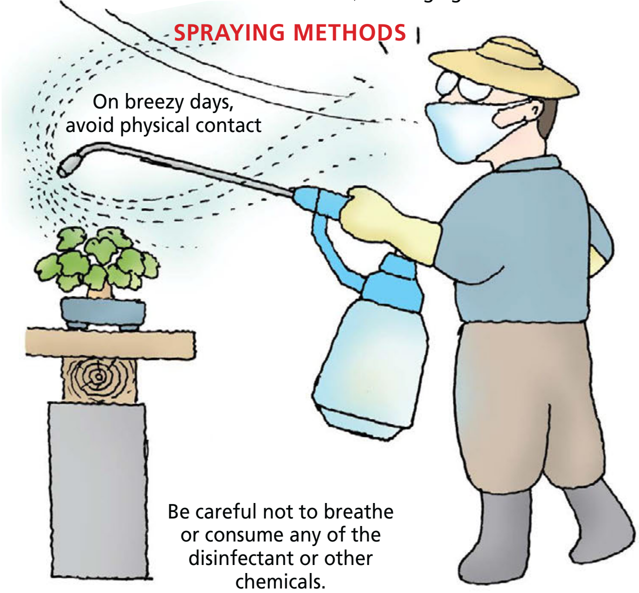

Sprayer (hand-operated)
Spray
Holds 3½ cups (1 liter) of solution
Holds 7 cups (2 liters) of solution
Disinfectant for winter
Sprays
Aerosol spray
Powder
Pesticide powder
Emulsions
Insecticide
Disinfectant
Wetting agent

TOOLS FOR DILUTION


Funnel
Measuring cup
Pipette
Chopstick
An insecticide or disinfectant
Water

Pour diluted pesticide or germicide into sprayer and start spraying.

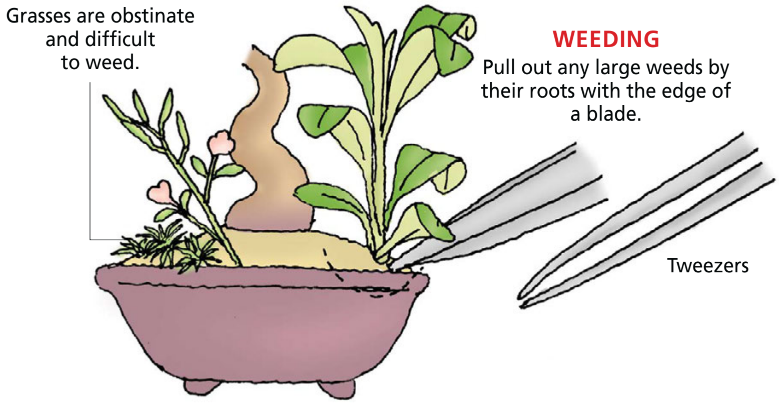
SPRAYING METHODS


On breezy days, avoid physical contact

Be careful not to breathe or consume any of the disinfectant or other chemicals.

WEEDING

Pull out any large weeds by their roots with the edge of a blade.

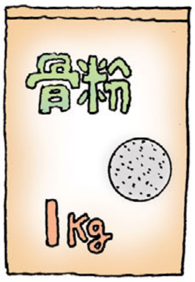

Grasses are obstinate and difficult to weed.
Tweezers

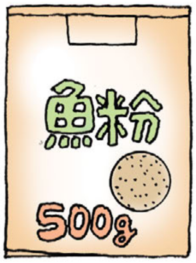
The Kinds of Fertilizers, and How to Use Them

GUIDE TO MAKING LIQUID FERTILIZER

WHAT TO PREPARE

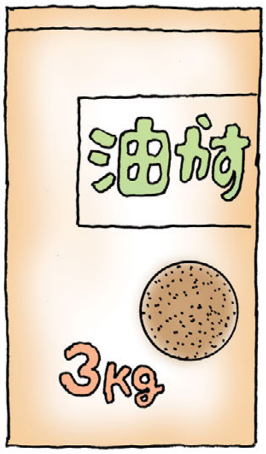
Bone meal (2 lbs / 1 kg)





Fish meal (1 lb / 500 g)

Powdered horticultural oil (6½ lbs / 3 kg)

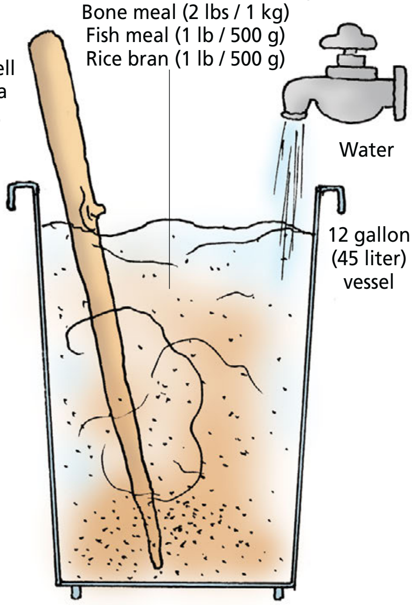


Stir well with a stick.

Horticultural oil (6½ lbs / 3 kg)
Bone meal (2 lbs / 1 kg)
Fish meal (1 lb / 500 g)
Rice bran (1 lb / 500 g)

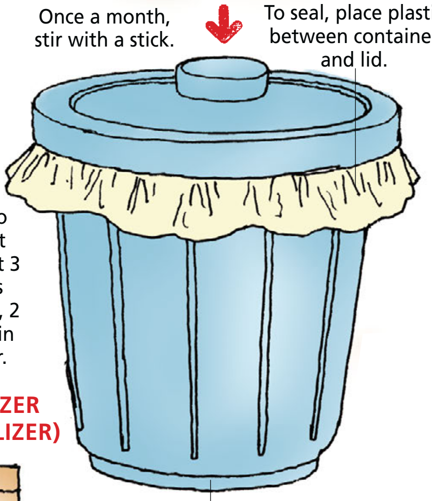
Water

12 gallon (45 liter) vessel



Once a month, stir with a stick.

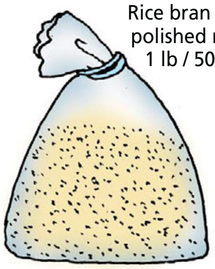
To seal, place plastic between container and lid.



Leave to ferment for about 3 months in winter, 2 months in summer.

Polyethylene bucket

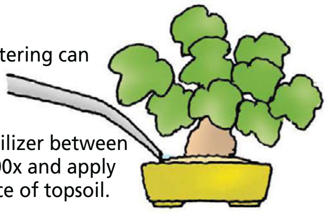
Rice bran (from polished rice—1 lb / 500 g)



Note: This step is used to accelerate fermentation process, and it is optional.

FERTILIZING GUIDE

Watering can



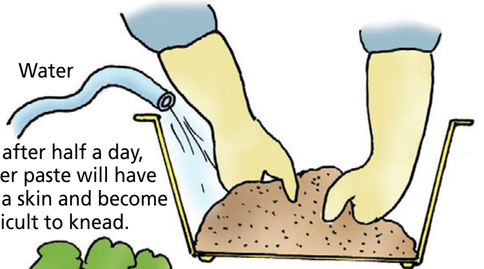
Dilute fertilizer between 10x to 100x and apply to surface of topsoil.

Note: Commercial fertilizers are also fine.

Fertilizing after watering is best.

PASTE FERTILIZER

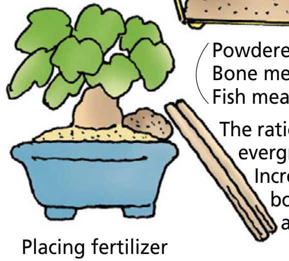
Water



Even after half a day, fertilizer paste will have formed a skin and become difficult to knead.

Powdered horticultural oil 60%
Bone meal 30%
Fish meal 10%

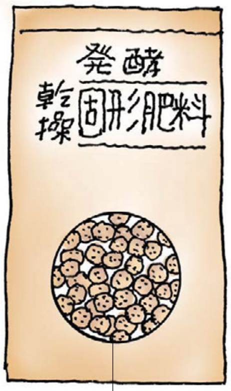
The ratio above is for evergreens and leafy trees. Increase the amount of bone meal for flowering and fruit-trees.



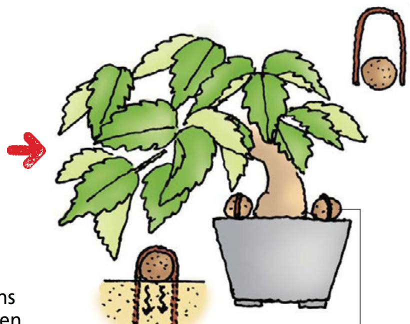
Placing fertilizer immediately after watering is best.

Place a lump of fertilizer paste by pot rim using chopsticks.

DRY PELLET FERTILIZER (COMMERCIAL FERTILIZER)



This fertilizer already contains the proper amounts of nitrogen, phosphoric acid and potassium and can be used immediately.



Place fertilizer pellets by pot rim.

EXPERIENCING THE LANGUAGE OF THE WORLD OF BONSAI WILL BROADEN YOUR UNDERSTANDING AND SET YOU TOWARD A NEW STAGE OF MASTERY

Glossary of Bonsai Terms

Ⓐ

Aburakasu See: Oil cake

Accent decor Scenery decorated with small items and accessories placed alongside the main bonsai tree.

Accent plant Used as an accompaniment. A plant that compliments the main tree in the bonsai viewing area (refer to page 8).

Acidic soil When chemical fertilizers and pesticides are used frequently, the soil is easily acidified. Also, in areas with heavy rainfall, such as Japan, soils tend to be acidic. For neutralization, apply bamboo charcoal.

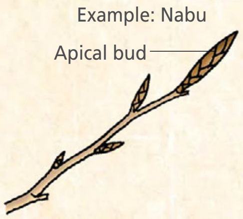
Adventitious shoots Buds or shoots that emerge from places other than normal, and are found on trees with strong vigor or young trees. Adventitious buds that come from the roots of trees are also called "suckers."

Age determination Determine the age of the tree by counting the number of rings observed in the cross-section.

Air-layering Air-layering refers to peeling off a ring of bark for the purpose of propagation. Adventitious roots will grow quite easily in the section that was peeled.

***Akadama* soil, red ball earth (*akadamatsuchi*)** Akadama soil, or red ball earth, is selected from volcanic soil. It takes on a rusty brown color due to iron oxidation. The reddened soil is granulated to maintain its superior water retention and drainage properties. It is used as gardening soil.

Alternating growth Branches and buds alternate from side to side, with no pairing counterpart on the opposite side, as in maples, pomegranates and so on. See page 191.



Apical bud A bud at the tip of a branch (or stem). The tips will vigorously sprout and grow into branches.

***Arakawashou* (rough bark appearance)** This kind of bark looks rough and has the appearance of the bark on old trees. *Arakawashou* may also refer to trees that have this characteristic.

***Araki* (new wood)** "New wood" refers to a sapling or some "raw material" that grew from a seed in nature.

Axil The base of the section where a leaf is attached to the stem. Where the leaves are on the join of a section that attaches to a stem, the buds that can be made here are called axillary buds.

Axillary bud (*ekiga*) axillary buds are buds that grow at the base of a leaf.

Ⓑ

Ball fertilizer Horticultural oil is kneaded with water, hardened into a ball and dried. The fertilizer is placed atop pot soil. There are many commercial products available.

Bamboo shoot A bonsai tree with a taper that is sharply reduced, like a bamboo shoot from the root to the core.

Bark appearance, rough See: *Arakawashou*

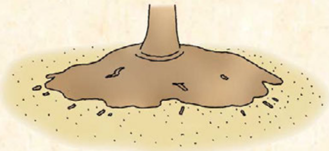
Bark, appearance of (*kawashou*) There are many kinds of bark—brocade texture, rough, turtle-shell texture, etc. Rough bark looks like the bark on old trees, which is desirable.

Basin / bowl A porcelain pot for bonsai that is wide and shallow, and often decorated with stones.

Bird's soil (*udei*) Bird's soil refers to pots that have no glazing, instead capitalizing on the charm of simple clay. They are of a light brown color with a gray tinge. Other unglazed kinds of pots can be made from violet soil, red soil, light crimson soil, green soil, etc.

Blooming, springtime The period of growth produces flowers, and enlarges stems and trunks, and grows branches and leaves.

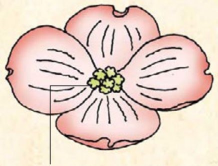
Bonsai tree A tree that has been well managed, with good shape and organization, and trimmed horizontal branches.



Bound roots A state where the roots grow together and form a clump. This condition is often found in maple and beech trees.

Example: Hanamizuki

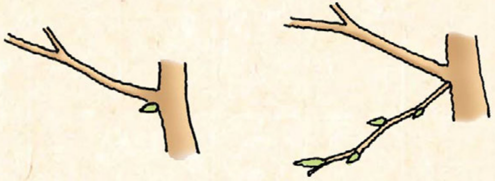
When bracts look like the petals of a flower


Real flowers that grow in the middle

Bract Leaves that wrap the buds. Found at the base of flowers and inflorescences.

Branch, lower Among the branches, long and thick branches that harmonize and change the aesthetic of the trees.

Branch growth In the spring, new branches appear and they will remain supple while growing. When the lengthening growth of the branches begins to slow, they will start to become more rigid as they thicken.



Branch insertion (*edauchi*) Branch insertion refers to the way branches are attached to the tree, the way they grow and their thickness. If branch insertion is proper, we call it good branch insertion. This meaning and usage is limited to the world of bonsai! In the Japanese lumber industry, *edauchi* refers to cutting off branches at the trunk.

Branch removal (*edanuki*) Removing branches refers to the action of leaving only branches that are necessary for creating branch training, photosynthesis and oxygen circulation. Also called pruning.

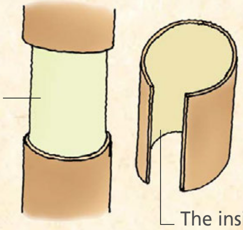
"Broom stand" Tree shape that resembles an inverted broom.

Bud movement Observable signs of budding.

Bud picking A method of picking up new shoots and suppressing overgrowth. Also called "green picking" and "candle picking." The purpose is to have many small branches and small leaves.

C

Example: girdling


The cambium layer is a yellow-green colored thin membrane
Bark
The inside of the bark is the phloem
The inside of the cambium layer is the xylem

Cambium A layer of meristematic tissue that is associated with the trunk and roots. It exists between the xylem, where water flows, and the phloem, where useful elements obtained through photosynthesis transit, and where cell division thrives the most. Grafting is one of the propagation methods, and a graft will root depending on the connection of the cambium layer of the stock and scion.

Calling A type of grafting, a method of grafting the branches of a tree with roots as scion. The optimum time is spring, and if the side of the branch is scraped off to make a scion and the rootstock with the same side cut is brought into close contact, the callus (fused tissue) will be fused by autumn.

Carbon to nitrogen ratio (C:N) Indicates the ratio of carbon (C) and nitrogen (N) contained in the plant body. The growth rate (nutrition) of young trees is low in carbon and high in nitrogen. During reproductive growth, the carbon rate is high and the nitrogen rate is low. It also changes depending on the season. For example, when 100 grams of carbon and 10 grams of nitrogen are included, the C:N ratio is 10. In the case of bonsai, the carbon rate increases with growth.

Chemical fertilizer (*kaseihiryou*) This kind of fertilizer is necessary for the cultivation of plants. It gives inorganic matter to your bonsai, containing 2 or more of the following: nitrogen, phosphoric acid and potassium. Specific ingredients and content by percentage are displayed in numbers.

Chief branch A strong branch that grows sporadically for many years. Many adventitious buds will develop on such a branch, which can have a major detrimental effect on achieving a pleasing tree shape if left unchecked.

Cliff, hanging One of the basic forms of bonsai. It resembles how a tree grows as it clings to a precipice, and so the bonsai branches and trunk droop down below the pot. If the tree does not droop below the pot and instead sticks out diagonally downward, it is referred to as a "half-hanging cliff." Those that bend sideways are called "windsock." Refer to page 13.

Conifer A tree with needle-shaped or scaly leaves, many of which are evergreens. Common examples are Japanese cedar, *hinoki*, and different cypress varieties.

Core The top of the bonsai. The core of the tree can also be called the "apex of the crown." Refer to page 7.

Cross fertilization Fertilizing with pollen from different trees.

Crossed branches A type of "dreadful branch" that is tangled. Refer to diagram 1, above right.

Cutting A branch to be inserted into the soil for propagation.

Cutting and replanting A breeding method that involves cutting tree branches, leaves, roots, etc., and putting them in the soil for rooting. In this way you can perpetuate the attributes of the donor tree. See page 21.

Cutting buds A breeding method that involves cutting out new shoots of trees and flowers, inserting them into the soil and rooting them. See page 21.

Cypress bonsai Japanese pine, *goyo* pine, juniper, needle juniper and cedar cypress are some of the man varieties. They are known for their strength and perseverance and have thus become the prime examples of bonsai.

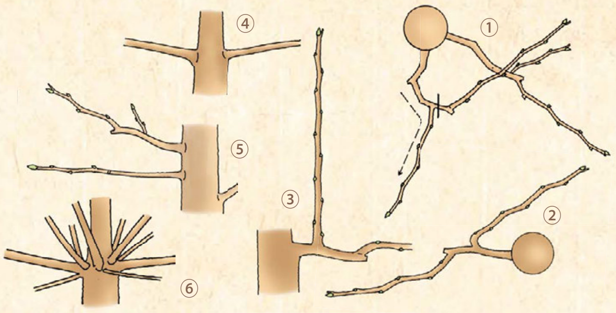
D

Defoliation One method of pruning is to remove the leaves to force the tree to produce more numerous, but smaller, leaves. This technique should only be attempted on robust deciduous trees.

Distribution of branches (*edabari*) The stretch of the branch refers to the length and thickness of branches on trees. Alternatively, it refers to the length of the longest branch measured from the ending point of all the other branches.

Division of branches (*edawakare*) The division of branches refers to the way in which branches divide off from the trunk.

Dobuzuke A practice where the entire pot is immersed in water so the plant's root system can absorb the maximum amount of water.



Dreadful branches (*Imieda*) Branches that can easily break the visual harmony and balance of the bonsai are called "dreadful branches." Dreadful branches are pruned.

① Crossed branches (*karamieda*). When branches have grown intertwined.

② Reverse branches (*sakaeda*). Branches usually grow away from the trunk, but reverse branches turn their growth toward the trunk.

③ Standing branches (*tachieda*). Branches that grow upward. Vertical branches.

④ Bar branches (*kannukieda*). Bar branches are pairs of branches that form a continuous visual line from left to right or from the front to the back.

⑤ Parallel branches (*heikoueda*). When multiple branches grow in the same direction close to each other, they become parallel branches.

⑥ Wheel branches (*kurumaeda*). When three or more branches grow from the same spot of the tree and create a spoke-like formation, they are called wheel branches.

Dwarf variety See: *Yatsufusa*

E

Earthenware bowl An unglazed bowl. It is common to plant pines and cypress trees in earthenware bowls because of the acidity of the soil and the attractive color of the bowls.

Edabari See: Distribution of branches

Edaburi See: Shape of the tree

Edanobi See: Extended branches

Edanuki See: Branch removal

Edauchi See: Branch insertion

Edawakare See: Division of branches

Ekiga See: Axillary bud

Evergreens Trees that have green leaves year round. The leaves are glossy due to the cuticular layer. They have glossy leaves or needles. Cypress bonsai fall into this category.

Exposed roots When the roots are visible on top of the soil.

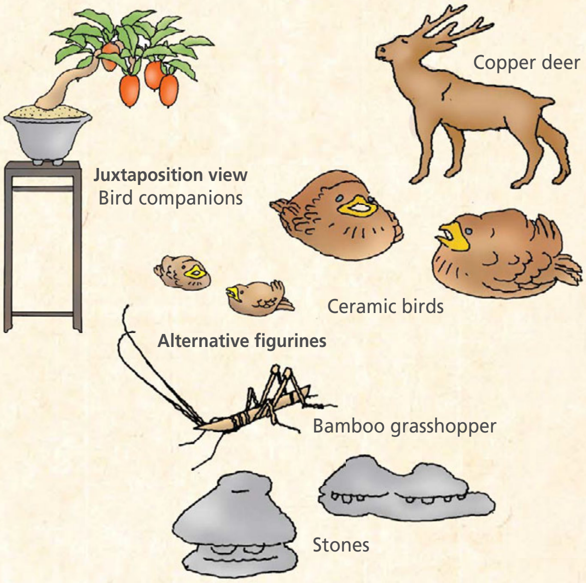
Extended branches (*edanobi*) Extended branches refers to the condition of branches that have been neglected and allowed to grow too long without bud picking and regular pruning. Leaves will only grow at the end of the branch, and there are few forking branches on the middle. This is an undesirable look for bonsai.

F

Fallen branch (*ochieda*) Fallen branches are branches that have been intentionally shaped to droop down. They are important for the visual harmony of the bonsai.

Fertilizing Fortifying the health of the tree and encouraging growth through the addition of artificial fertilizer suitable for the plant.

Fertilizing as a token of gratitude (*oreihi*) Giving fertilizer to a bonsai that has produced flowers or fruit to replenish the bonsai's nourishment and prevent weakening. *Oreihi* is fertilizer with a high amount of nitrogen.



Figurine An accessory that helps to complete a bonsai arrangement. Common figurines include humans, animals, insects or Buddha statues.

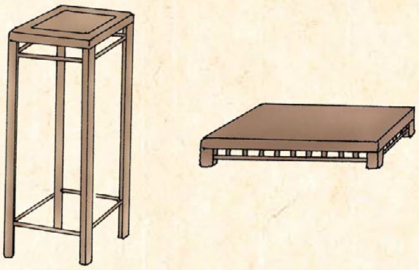
Filament (*kashi*) The filaments are threadlike parts of the flower that support the stamen. Refer to page 190.

First branch (*ichinoeda*) The branch that is closest to the roots. It is often the thickest, longest branch on the bonsai. Going up the tree, the branch that is second closest to the roots is logically called the "second branch" and the branch that is third closest to the roots is called the "third branch."

Fixed bud Top and side buds in fixed positions. Other buds are called "adventitious buds."

Flower bud A bud that becomes a flower. Called a "reproductive bud" in botanical terms.

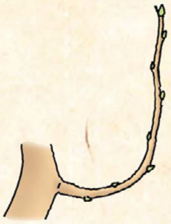
Flower bud cultivation (*kagabunka*) Cultivation refers to the natural process of specialization of cells, tissues and organs for a specific purpose. In bonsai, flower and leaf bud cultivation usually happens in summer.



Flower vase stand (*kadai*) Stands are used during viewing sessions.

Flowers, picking The purpose of picking remaining flowers after most of the blooms have wilted is to prevent the decline of tree vigor and pest damage. In order to avoid the decline of the tree due to fruiting, the flowers are picked by pinching the base of the ovary.

Foraging Collecting promising natural trees that are suitable for bonsai growing.



Frog-leg branch (*kaerumata*) The frog-leg branch is a kind of dreadful branch. The division and growth direction of the branch from the trunk looks similar to frog legs.

Front branch Branches that appear at the front of the bonsai. Considered a type of "dreadful branch."

Fruit and flower training Determining where the buds will be allowed to appear on the branches through bud pinching.

Fuji sand A volcanic soil that fosters good water retention and uptake of nutrients. This soil is used when displaying bonsai. It improves the appearance of the bonsai and hides the dirt on the bottom. You can use moss for the same purpose.

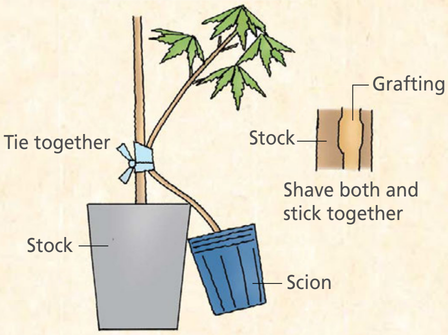
Fujimoto See: Vine

Fungicide Pesticides used for disease prevention.

Futokoro The parts of the tree branches that are close to the trunk. If this part of the bonsai is "branchy," the tree is more impressive, but if it gets too crowded, the ventilation and access to sunlight will be poor and the tree shape will be less than ideal.

G

Gakuhen See: Sepal


Grafting
Tie together
Stock
Shave both and stick together
Stock
Scion

Grafting A method of propagating in which a non-rooted branch or bud is inserted into the stem of a rooted strain and the formation layers of both are fused. See pages 18–21.

Gravel Also known as "bottom soil," it is the largest-grain used (about ¼ to ½ in / 7 to 10 mm in diameter). It improves drainage at the bottom of the bowl.

Ground plane A board upon which pots and basins are placed when viewing bonsai.

Grouping Planting multiple trees together in a pot to approximate the look of a forest scene.

Growing bud Adventitious buds that grow from the roots of trees. These are likely to develop into trunks.

Growth When the trunk and branches grow to widen and heighten the tree.

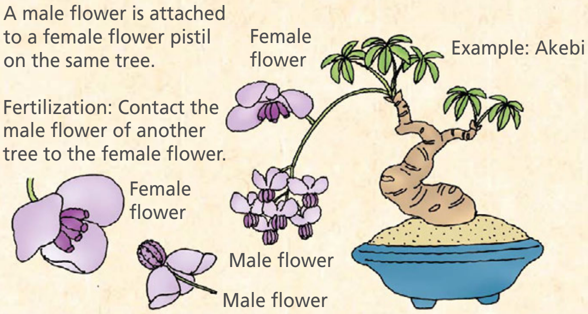
H

Haname Flower bud.

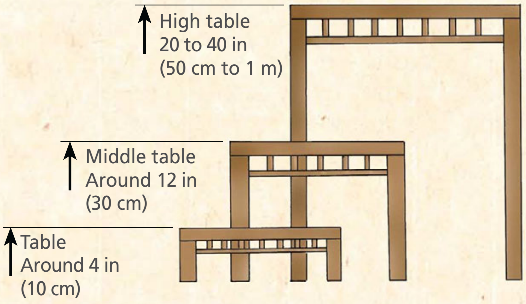
***Happo* root growth** A root system that indicates a sense of stability, with roots radiating in all directions.

Height of the tree (Refer to page 7.) The height from the root of the tree to tip of the trunk.

Herbaceous plants Non-woody plants. Those that sprout in the spring and die within that year or the following year are annuals. Perennials live for more than two years. Even if the above-ground part withers, the underground part of a perennial survives for many years. In both cases, the xylem does not develop, and stem enlargement is limited. In other words, it is not a tree.


A male flower is attached to a female flower pistil on the same tree.
Female flower
Example: Akebi
Fertilization: Contact the male flower of another tree to the female flower.
Female flower
Male flower
Male flower

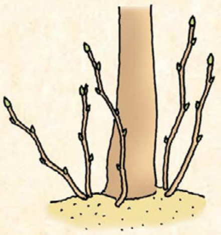
Hermaphrodite A plant that bears male and female flowers on the same tree.


High table
20 to 40 in
(50 cm to 1 m)
Middle table
Around 12 in
(30 cm)
Table
Around 4 in
(10 cm)

Hira Bonsai display platform with legs that serves as a table. Tables that have a height of 4 inches (10 cm) are called "*hira-shoku.*" Tables about 12 inches (30 cm) high are called "middle *shoku.*" Tables between about 20 to 40 inches (50 cm to 1 m) are called "high *shoku.*"

Humus Fallen leaves and twigs that have been placed in a heap and turned into soil through decomposition. This rich soil can be added to depleted soil to make it a better growing medium. You can purchase bagged humus at garden centers.

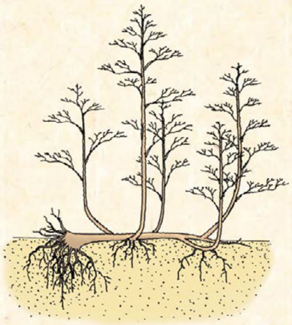
Husbandry Appropriate management, care and cultivation of bonsai.



Hypertrophy When the trunk or the branches grow to be too thick.

I

Ichinoeda See: First branch



***Ikadabuki* (raft form)** *Ikadabuki* is one of the ways in which a tree can grow. The branches from a tree that has toppled over grow upward, functionally becoming trunks.

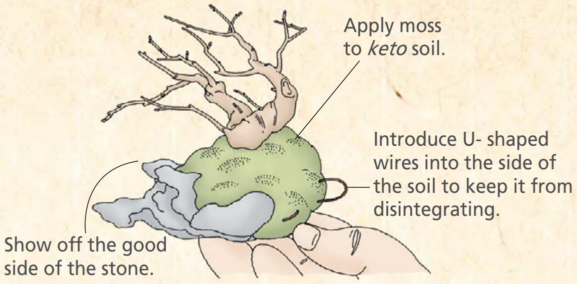
Imieda See: Dreadful branches

Improving the form (*kaisaku*) When pruning or layering, we improve the bonsai by adjusting the angle at which branches etc. grow or by improving the way the bonsai looks from the front. We do this often when we have devised a way to create a better look for the bonsai.

Inflorescence (*kajo*) Inflorescence is the appearance of multiple flowers on one flower axis.

Insecticide A chemical application that controls pests.

Inside ridge (*uchien*) This term refers to pots that have their ridge folded over to the inside.



***Ishizuke* (attached to stone)** *Ishizuke* is one of the ways in which a bonsai can grow. The bonsai has partially been planted on a stone to add a sense of rustic beauty and natural scenery.

J

Jin When the branch withers and becomes deadwood. For the purpose of showing age in Cypress bonsai, we purposely shave the bark or the skin of the tree. Also, when you take away the unwanted branches, we can leave a bit of the base of the branch and create a *jin*. This emphasizes the aged appearance of the tree. Refer to page 172.

K

Kadai See: Flower vase stand

Kaerumata See: Frog-leg branch

Kaga Flower bud

Kagabunka See: Flower bud cultivation

Kaisaku See: Improving the form

Kajo See: Inflorescence

Kanjouhakuhi See: Air-layering

Kanju See: Tree in winter

Kankouseihiryou See: Long-term fertilizer

Kannukieda Terminology used to describe a bonsai branch that fails to meet the standard of beauty for a bonsai branch.

Kanshoubachi See: Prize pot

***Kansui* (sprinkling of water)** To water the plant.

Kanuma soil Kanuma soil is light granular volcanic soil that has been eroded by wind, found in the area surrounding Mt. Akagi, Tochigi prefecture and the coast of Ibaraki prefecture. It has high water retention and breathability. Kanuma soil is used for propagation. It gets its name from its prevalence around the town of Kanuma.

Kataeda See: One-sided branches

Katanebari See: One-sided root settling

Kawashou See: Bark, appearance of

***Keto* soil** A sticky soil formed from plants (mainly phragmites) growing in swamps and rivers. This fiber-rich soil is useful for attaching bonsai plants onto rocks or making moss balls.

Kiryu River sand A type of coarse, grayish, iron-rich soil exported from Kiryu, Gunma prefecture. It is great for drainage and breathability, is water-retentive, and has enhanced drainage capability when mixed with *akadama* soil.

Kisugata The way a bonsai is shaped, the figure of the bonsai.

Knot hole (*uro*) Holes that occur when scars on the trunk that were made during pruning start to rot, open up and hollow out.

Kuitsukieda A very short branch that appears to be biting onto the tree's trunk. Frequently seen in artistic bonsai creations.

Kuruma eda Branches that grow haphazardly from a single spot.

Kusamono Essentially, bonsai that have been shaped from wild herbs, grasses or flowers. *Kusa* means "grass" and *mono* means "thing" or "material."

Kyokkan A bonsai with a lot of bent branches; an extreme example of a *moyogi*-style (curved) tree.

Kyoku The bent part of the trunk or branch of the bonsai.

Kyoku zuke Using wires to bend the bonsai branches. This is one of the important processes when nurturing a bonsai plant (a tree so wired will be healthy due to receiving a good amount of sunlight and adequate ventilation. Refer to page 171.

L

Lead root Roots growing seed embryos. (See page 188.)

Lead trunk When there are multiple trunks from the root of a tree, the lead is the thickest and tallest of them.

Leaf burn Strong sunshine in summer and high temperatures cause excessive transpiration from the leaves, and some or all of the leaves wither when the water absorption from the roots is insufficient.

Leaf watering The sprinkling of water on the leaves. This has the effect of removing dirt and preventing leaf burn.

Leafiness A term describing leaf properties, including size and gloss, as well as canopy organization. Leafiness is said to be good if the bonsai exhibits attractive organization and bears a proliferation of small, shiny leaves.

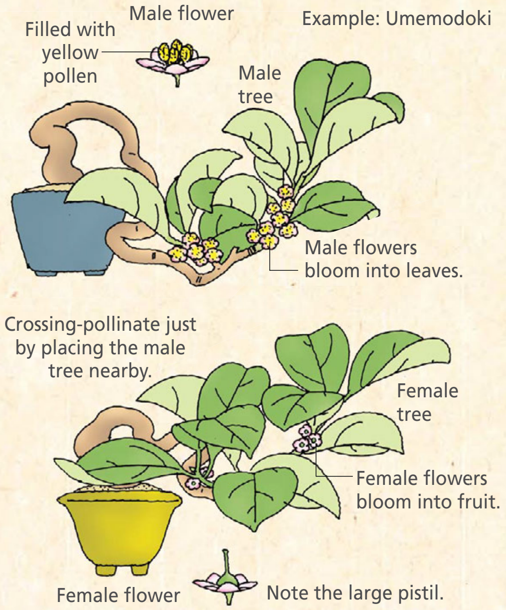
Legginess Excessive branch growth. A result of inattentiveness to trimming, it is also affected by lack of sunshine, excessive nitrogen content in the soil, lack of ventilation and crowded buds.

Liquid fertilizer Water containing dissolved fertilizer.

***Literati* tree** A bonsai tree shape with a thin trunk and few branches. The beauty of the tree springs from the rugged sparseness of the unusual tree form. See page 13.

Long-term fertilizer (*kankouseihiryou*) This kind of fertilizer is usually organic and releases its nutrients over a longer period of time.

M

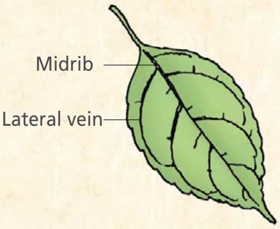

Filled with yellow pollen
Male flower
Example: Umemodoki
Male tree
Male flowers bloom into leaves.
Crossing-pollinate just by placing the male tree nearby.
Female tree
Female flowers bloom into fruit.
Female flower
Note the large pistil.

Male and female mixed stock (dioecious) Plants that have separate male and female trees.

Masaki Bonsai made from seedlings and natural trees, excluding cutting methods, grafting, calling and air-layering. In the bonsai world, it is one of the traditional characteristics of a legitimate bonsai tree.

Material Seedlings or untrained trees that will be made into bonsai.

Midori A pine bud that has not yet opened its needles. Picking these and thus affecting the proliferation of the buds is called "green picking." See pages 152–155.



Midrib A large vein running in the middle of the leaf. The vascular bundle of the stem flows into the leaf, and sends water and nutrients from the stem to the leaf, playing a role in sending the carbohydrates made by leaf photosynthesis (carbon dioxide assimilation) to the stem. (Refer to page 191.)

Mini bonsai Bonsai that are smaller than 4 inches (10 cm).

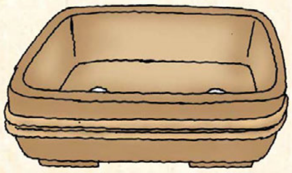
Miscellaneous bonsai Bonsai trees other than pines.

Moss order The "moss order" is said to be good when the tree gradually narrows from the root of the stock toward the upper core. A shape reminiscent of a full size tree is the preferred form.

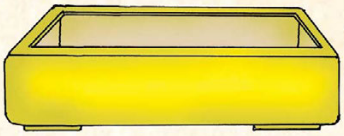
***Moyogi* (bending trunk)** A tree with a trunk that bends forward, backward, left and right. See page 12.

Mycorrhizae Symbiotic bacteria that proliferate in the root cells, providing nitrogen to the plant in exchange for carbohydrates from the tree.

N



Nadekaku A bowl shape characterized by rounded corners.



Nanjing Long Bowl

Nanjing bowl A Chinese bowl with glaze over porcelain.

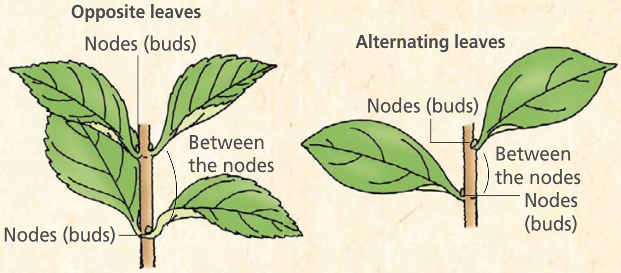
***Nearai* ("Root washing")** After potting, once the roots have grown into the shape of the pot, the plant is removed and allowed to aerate without the pot to keep the roots from adhering to the container.

Needle removal One of the methods for shaping black pine and red pine. In the second bud that has grown after bud cutting, all the old needles are removed during the dormancy period, and particularly thick parts are thinned out in the new needle growth. See pages 154–155.

New branches Branches that have grown from the spring a given year. These are called first-year branches. In the next year, they will be called second-year branches.

New wood See: *Araki*

Nishiki When the bark on the tree exhibits a rough texture.



Node Bud growth that will ultimately become branches. Generally, the space between nodes becomes shorter the closer the nodes get to the end of the branch.

Nourishment and growth (*eiyouseichou*) nourishment and growth refers to the process of a plant growing taller and the growth of stems and the trunk, eventually pushing the production of leaves and branches to luxurious growth.

O

Oblique trunk One of the basic forms of bonsai, with the trunk not standing upright but tilting to the left or right. See pages 12–13.

Oil cake (*aburakasu*) these cakes are made of the dregs of oily vegetables such as soy beans and turnip rapes. They contain a lot of nitrogen. Once they have fermented completely, oil cakes are used in gardening, bonsai, etc.

Old crossing A style of bonsai pot imported from China before the Meiji period. The bowls produced during the Meiji-Taisho period were distinguished as "*Nakawatari*," and those from the end of Taisho until before the war were distinguished as "*Shinto*."

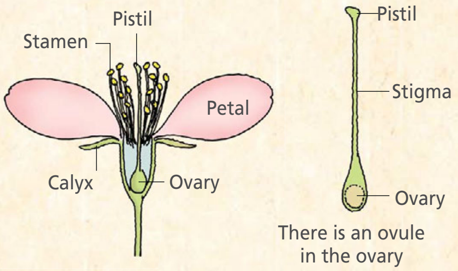
One-sided branches (*kataeda*) When looked at from the front, a bonsai with "one-sided branches" has many branches on one side and few branches on the other. This usually breaks the visual balance, but it can also create a natural windswept look.

One-sided root settling (*katanebari*) "One-sided root settling" occurs when the bonsai's roots settle mostly on the left or right side when viewed from the front.

One-year branches (*ichinenshi*) One-year branches are branches that matured from a shoot but have not seen their second spring yet. One-year branches become two-year branches the following year.

Organic fertilizer Natural fertilizer based on animals and plants. Many exhibit a slow release and are slow acting.

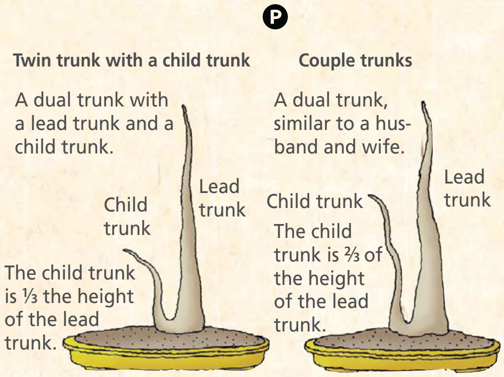
Original fertilizer Fertilizer necessary for growth before transplanting. Slow-acting organic substances are often used.


Pistil
Stamen
Petal
Calyx
Ovary
Pistil
Stigma
Ovary
There is an ovule in the ovary

Ovary This is the fruit at the puffy part under the pistil. The ovule in the ovary becomes the seed.

Oven-baked pots Unglazed pots that have been baked at nearly 1,500°F (800°C). It is good for plants to be potted in this type of container because it allows for good drainage.

Over fertilization Excessive fertilizer concentrates in the moist soil around the roots, damaging them and resulting in poor growth.


P
Twin trunk with a child trunk
A dual trunk with a lead trunk and a child trunk.
Child trunk
Lead trunk
The child trunk is ⅓ the height of the lead trunk.
Couple trunks
A dual trunk, similar to a husband and wife.
Child trunk
Lead trunk
The child trunk is ⅔ of the height of the lead trunk.

Paired trunks A single base trunk with two main branches. Sometimes referred to as a "couple."

Parallel branches One of the "dreadful branches." See page 178.

Pesticides Granular chemicals that are administered to the soil for the purpose of eliminating pests. The substance will dissolve when the tree is watered and be taken up through the roots. Insects feeding on the sap of a tree that has been treated will ingest the pesticide and die.

Petiole The stem attached to the leaf that serves as a conduit for sap.

pH A symbol indicating the hydrogen ion concentration of soil or water. The middle is pH 7. Acidity is a numerical value less than 7, but the hydrogen ion concentration is high. Alkalinity is a numerical value greater than 7, and the hydrogen ion concentration is low. In general, fertilizers and pesticides continue to be acidic, and when mixed with chalk, plant ash, charcoal, etc., it becomes alkaline. Soil adjustment suitable for the plant is necessary.

Phoenix graft ("*tankuki* bonsai") Live bonsai tree material is rooted to interesting looking deadwood to mimic the appearance of an ancient tree.

Photosynthesis Plants that have chlorophyll will use sunlight to synthesize carbon dioxide from the atmosphere and water absorbed from the roots to create oxygen. The process involves carbon dioxide assimilation.

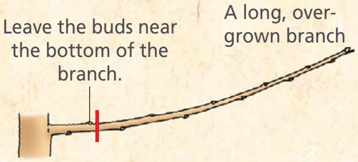
Porcelain Pale yellow or light gray Chinese earthenware bowl made from clay with low iron oxide content.

Pot spillage When branches and leaves overhand the edge of the bowl, as seen on cliffs.

Potting Moving bonsai that were planted as seedlings in the ground into pots.

Primary branch A branch that is indispensable to the overall composition of the tree.

Prize pot (*kanshoubachi*) A pot is used to display the tree. The tree is moved from an unglazed pot to a temporary pot for viewing, and then to a permanent pot. Refer to pages 22–23.


Leave the buds near the bottom of the branch.
A long, overgrown branch

Prune back A pruning technique where the buds near the tip of the branch are cut off, leaving only the buds near the base of the branch. By doing so, one can encourage small branch growth. This is a necessary step to renewing the branches.

Pruning In order to make the bonsai beautiful, make sure to trim the branches when necessary.

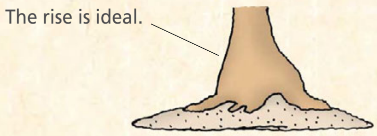
R

Reflection A quality expressed in terms of "good" or "bad" when referring to whether a tree and its bowl exhibit visual harmony.

Reform To attach and string wires on the branches to bend or shape the bonsai tree branches a certain way.

Reproductive growth Growth that produces flower buds, which precedes blooming and fruiting.

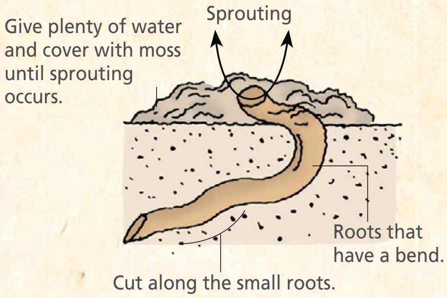
Reverse branch One of the "dreadful branches." See page 178.


The rise is ideal.

Rise One of the aesthetic points of good bonsai. The tapering shape between the roots and the first branch.

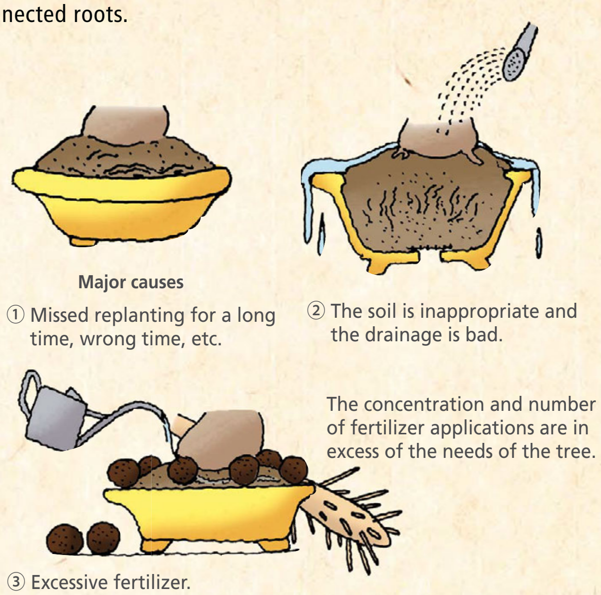
Root binding When the roots encounter a barrier and become overly dense in the pot.

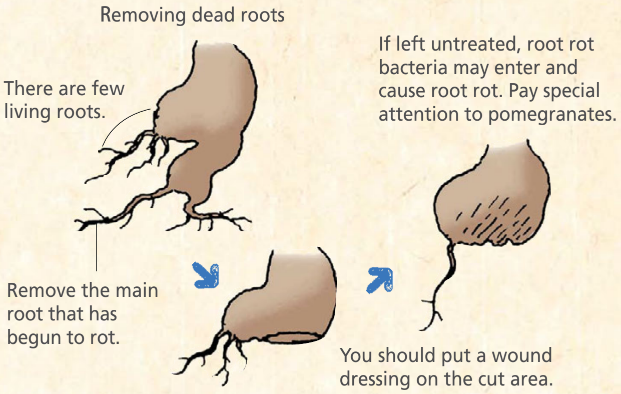
Root hair A filamentous tissue that grows near the tip of the root and absorbs moisture and nutrients.


Give plenty of water and cover with moss until sprouting occurs.
Sprouting
Roots that have a bend.
Cut along the small roots.

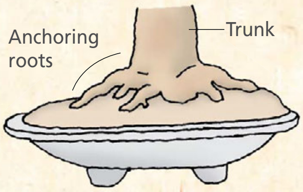
Root insertion One of the propagation methods, accomplished by cutting the roots and inserting them into the soil.

Root range A tree with multiple standing trunks and connected roots.


Major causes
① Missed replanting for a long time, wrong time, etc.
② The soil is inappropriate and the drainage is bad.
The concentration and number of fertilizer applications are in excess of the needs of the tree.
③ Excessive fertilizer.


Removing dead roots
There are few living roots.
If left untreated, root rot bacteria may enter and cause root rot. Pay special attention to pomegranates.
Remove the main root that has begun to rot.
You should put a wound dressing on the cut area.

Root rot This problem may be due to poor drainage, or it may be a sign of too much fertilizer being used. Bacterial infection can also have a detrimental effect on the roots.

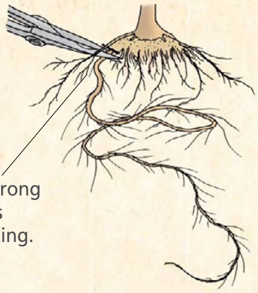

Anchoring roots
Trunk

Rooting One of the ornamental objectives of bonsai is to exhibit the growth of the roots on the surface. It expresses the strength and stability that anchors the tree to the earth.

Rootstock When grafting, the part of the tree that is being inserted.

Rope, decorative A symbolic decoration wrapped around the planting bowl representing purity and protection.

Rounded trunk A round trunk with no scars.

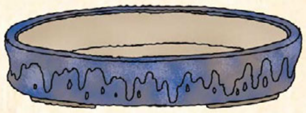

Prune back strong running roots when replanting.

Running root A root that grows extremely long compared to other roots. Shorten when replanting.

S

Sap-sucking pests Insects such as aphids and scale insects that have needle-shaped mouth parts that they use to suck the sap from plants and trees.

Scion When grafting, young shoots and branches that connect to the rootstock.


Round sea-cucumber bowl

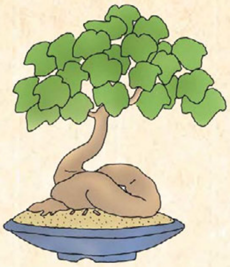
Sea-cucumber bowl Japanese and Chinese bowls with blue and white marbled patterns. The color is derived from indigo glaze.

Seat The roots of a tree, particularly when they have adhered together and become a single lump.

Seedling tree The raw material that is used as the basis for making bonsai. Seed tree.

Self-fertilization Flowers and fruit that supply their own pollen. Pollination and fertilization between the same strain and flowers.

Self-incompatibility Plants that cannot bear fruit using their own pollen. Even if self-pollination occurs, fertilization will not occur, and it will be difficult or impossible for the plant to produce fruit.



Semi-hanging cliff Trees with trunks and branches that do not hang down far below the pot, but instead only dip to near the level of the bottom of the container.

Sepal (*gakuhen*) Parts of the calyx are called sepal. Calyx is a botanical term, referring to the crown of the flower (where the petals are gathered.) Refer to page 190.

Shape of the tree (*edaburi*) The silhouette of the tree and its visual harmony.

***Shari* trunk** A condition where part where the trunk has withered and the woody part is white. It is often found in coniferous pine tree bonsai, and is often created artificially by removing the bark. See page 172.

Shinto pots Pots imported from China during the first half of the Meiji era are called "*towatari*." Those from the middle of the Meiji era to the beginning of the Taisho era are called "*nakawatari*."

Short branch A branch with short internodes that grows only slightly year by year. Typically seen in ginkgo, larch and others.

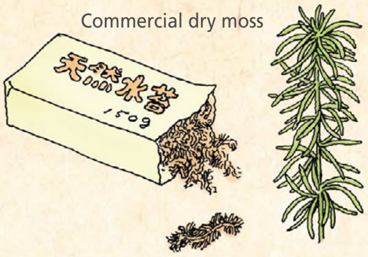
Shrub A tree that has a height of several meters or less, has no clear thickened trunk, but rather many slender stems, such as azalea, Chinese quince, pyracantha, etc.

Single trunk A bonsai with just one trunk.

Small bonsai Normally, trees that are at most 8 inches (20 cm) are called "small bonsai." Bonsai standing at 2¾ to 3⅛ inches (7 to 8 cm) are called "miniature bonsai."

Soil porosity The ratio of the volume of water and air contained in the soil expressed as a percentage.

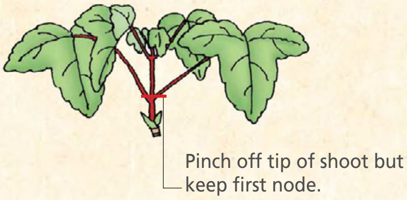
Sowing Seed planting.


Commercial dry moss
天然水苔
150g

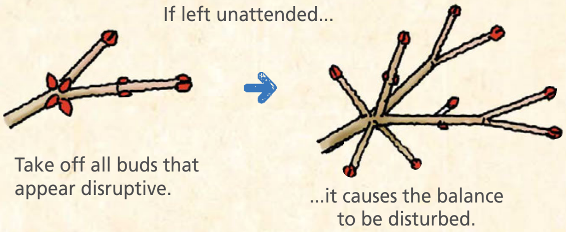
Sphagnum Moss that grows in wetlands. While alive, it is bright green. The sage-colored moss used for horticultural water-retention purposes is simply dried sphagnum moss.

Spiral grain The tendency of the trunk to twist as it grows.

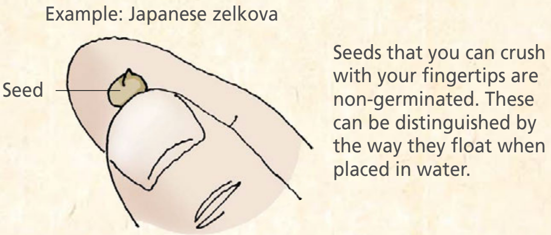
Sprout When the leaf forms, budding.


Pinch off tip of shoot but keep first node.

Sprout trimming By trimming off new shoots when they appear, the tree's energy is redirected toward increasing the number of branches while maintaining a limited number of leaves or needles. This is an important task in caring for Japanese black pines. It is also called the "short leaf method." This technique has a variety of purposes and applications. It involves removing the buds that appear in spring, but allowing the second buds that grow later in the year to remain. Essentially, the strong parts are suppressed and weak parts are preserved.


If left unattended...
Take off all buds that appear disruptive.
...it causes the balance to be disturbed.

Sprout (or bud) picking The act of removing superfluous buds.


Example: Japanese zelkova
Seed
Seeds that you can crush with your fingertips are non-germinated. These can be distinguished by the way they float when placed in water.

Sterility The condition of some seeds that are incapable of germination.

Stipule A pair of structures at the base of the petiole, which is said to play a role in protecting young shoots that have just emerged. See page 191.

Stone, attached See: *Ishizuke*

Straight root A young root that emerges from a seed embryo and grows straight down. From there, lateral roots, fine roots and root hairs are produced.

Straight trunk A tree that is straight and upright without bends in its trunk.

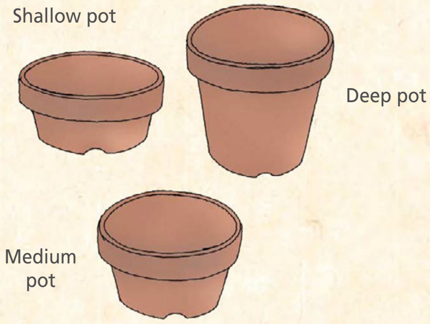
Cut-back pruning / halfway pruning (*oikomisentei*) In order to decrease the size of a branch, cut it in the middle.

Successful settling (*katsuchaku*) Successful settling occurs when a bonsai that has been moved from one pot to another successfully settles its root into the new soil. This term can also be applied to the root settling of cuttings, or proper adhesion of the scion in grafting.

Support roots Strong roots that grow in the opposite direction of the slant of the trunk. These provide major support to the trunk.

Surfactant Additive used to facilitate the adhesion of sprayed insecticide to the surface of leaves and stems.

T


Shallow pot
Deep pot
Medium pot

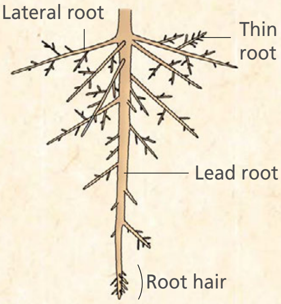
Tailoring pot A pot for planting a bonsai that is dedicated to the purpose of growing trunk branches more vigorously. Sometimes a weakened tree is transplanted into a "tailoring pot" to help it recover.

Takagi Any tree species that has a crown reaching several meters above the ground. An *Otakagi* (macrophanerophyte) reaches 20 meters or more. For convenience, in horticulture, trees with a height of 3 meters or more are classified as trees, while those under 2 meters are considered shrubs.

Taking root (*uekomi*) Taking root refers to the planting of a bonsai in a pot.

***Tanuki* bonsai** See: Phoenix graft

Tenjin River sand Sand collected upstream of the Tenjin River in Hyogo Prefecture. It has beneficial minerals and excellent air permeability, but weak water retention.



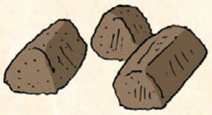
Thin roots Fine roots that originate from the lateral roots. The young root of the seed embryo emerges and grows straight down. From the straight root, lateral roots emerge on the sides, and then fine roots and root hairs are formed to absorb moisture.

Third-year seedlings Seedlings three years after having been sown. These are a recommended as hassle-free starter trees for beginners. However, some may take several years to flourish.

Tightened tree It is a bonsai tree that has been well managed and cultivated for a long time, has a well-shaped trunk, and has no overly-long branches.

To bring in In bonsai nomenclature, the act of tending a tree. For instance, managing a bonsai for 30 years can also be referred to as "bringing in the tree for 30 years."

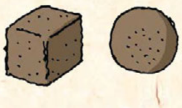
Example: About ⅜ in (1 cm) of solidified fertilizer



About 70% nitrogen
About 20% phosphoric acid
About 10% potassium

Mainly for pine and cedar. No. 3 bowl, one piece in each.

Example: About ⅜ in (1 cm) of commercially available solid fertilizer



About 35% nitrogen
About 50% phosphoric acid
About 15% potassium

Mainly for flowering and fruiting bonsai. One piece is standard for a No. 3 bowl.

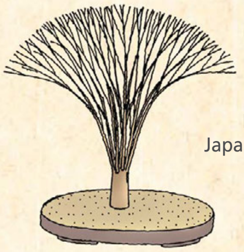
Top dressing Solid fertilizer pellets added topically as a necessary infusion of nutrients each time the tree is replanted and during periods of growth.

Training and grooming Pruning the branches, plucking the leaves, and securing the trunk and branches with a wire. These actions change the shape and posture of the bonsai tree.

Transplanting (*uekae*) The act of removing a bonsai or sapling from its pot, cutting down any roots that have grown too long, placing new soil in the pot and returning the bonsai to the pot again. (Refer to page 18.)

Tree core The trunk. Refer to page 7.

Tree crown In forestry nomenclature, it is the entire canopy of the tree. In the case of bonsai, "crown" refers to only the branches and leaves at the very top of the tree.



Example
Japanese zelkova

Tree in winter (*kanju*) Deciduous trees lose their leaves in the winter, leaving only the silhouette of the branches. The Japanese zelkova and maples are popular for this look. The thin, bare branch distribution and arrangement specific to the tree species paired with winter buds and the beautiful fallen autumn leaves make for the perfect viewing session.

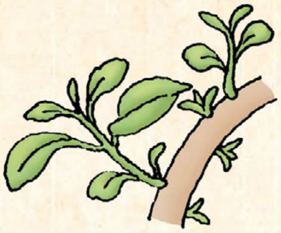
Tree shape The bonsai's shape, which mimics the shape and appearance of wild trees, and is classified into basic trunks, patterned trees, and cliffs. (Refer to pages 12–13.)

Tree species Trees of a specific type. Males of a given species can pollinate females of the same species.

Tree vigor Growth (health) status of individual trees.

Triple trunk Tree shape with three trunks standing from the root of one tree. Two trunks are "twin-stems" and five or more are "stocks."

Trunk hollow The root forms a single trunk, but due to mishap, disease or pest damage, a hole forms in the middle.

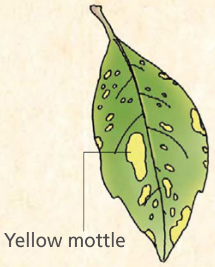


Trunk buds Adventitious buds on the trunk.

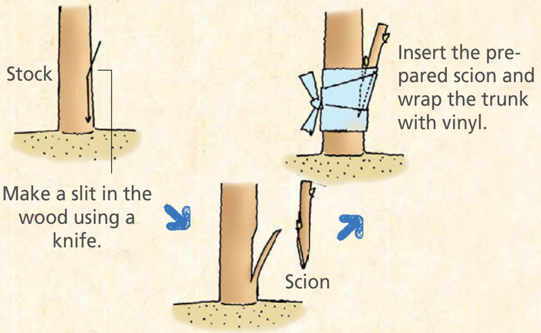
Trunk pattern The degree of bending in the trunk.

V

Example: Aoki



Variegation When the leaves exhibit patterns in two or more colors.



Insert the prepared scion and wrap the trunk with vinyl.

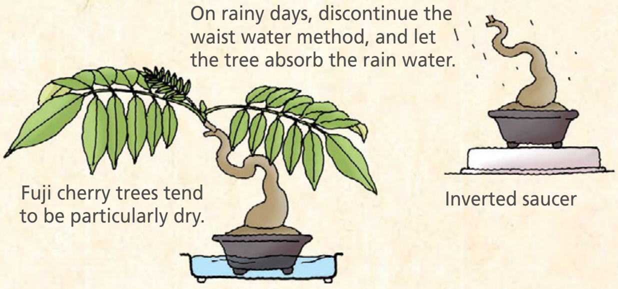
Make a slit in the wood using a knife.

Veneer grafting A method to propagate using a graft. Make a slit near the surface of the stock wood and insert graft material (scion) into the slit. Then, wrap vinyl around the trunk.

Vermilion A reddish, unglazed earthenware bowl.

Vine A plant that grows tendrils that become woody, such as Oriental bittersweet, chocolate vine, *Kadsura japonica*, etc.

W



On rainy days, discontinue the waist water method, and let the tree absorb the rain water.

Fuji cherry trees tend to be particularly dry.

Fill the water to the bowl's "waist height." By afternoon, the water level should fall below the bowl.

Waist water A method of immersing the entire bowl in a basin filled with water, allowing moisture to be taken up through the hole in the bottom of the bowl. Effective as a dehydration-prevention measure in the summer.

Wakagi An unfinished bonsai that has not yet passed the test of time and does not yet present the appearance of an old tree.

Windsock Said of the shape of a tree with branches and trunk leaning strongly in one direction, as if being swept by the wind. See page 13.

Winter buds Buds that grow over the winter and sprout the following spring.

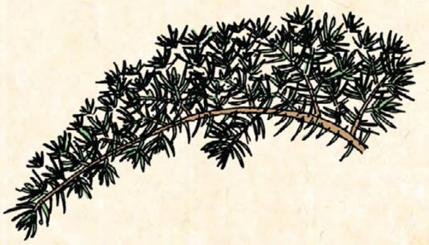
Wiring Trees tend to grow directly upward if left untended. Bonsai practitioners wrap wire around branches and trunks to improve ventilation and leaf access to sunshine, and also to pleasingly alter the shape and direction of the limbs and trunk. The goal is to train the bonsai and bring forth the appearance of a large old tree. See page 171.

Wound dressing Agents that prevent pruning cuts from being attacked by pathogens and pests, and to promote the formation of *callus* (a tissue that closes over the wound when the plant is damaged).

Y

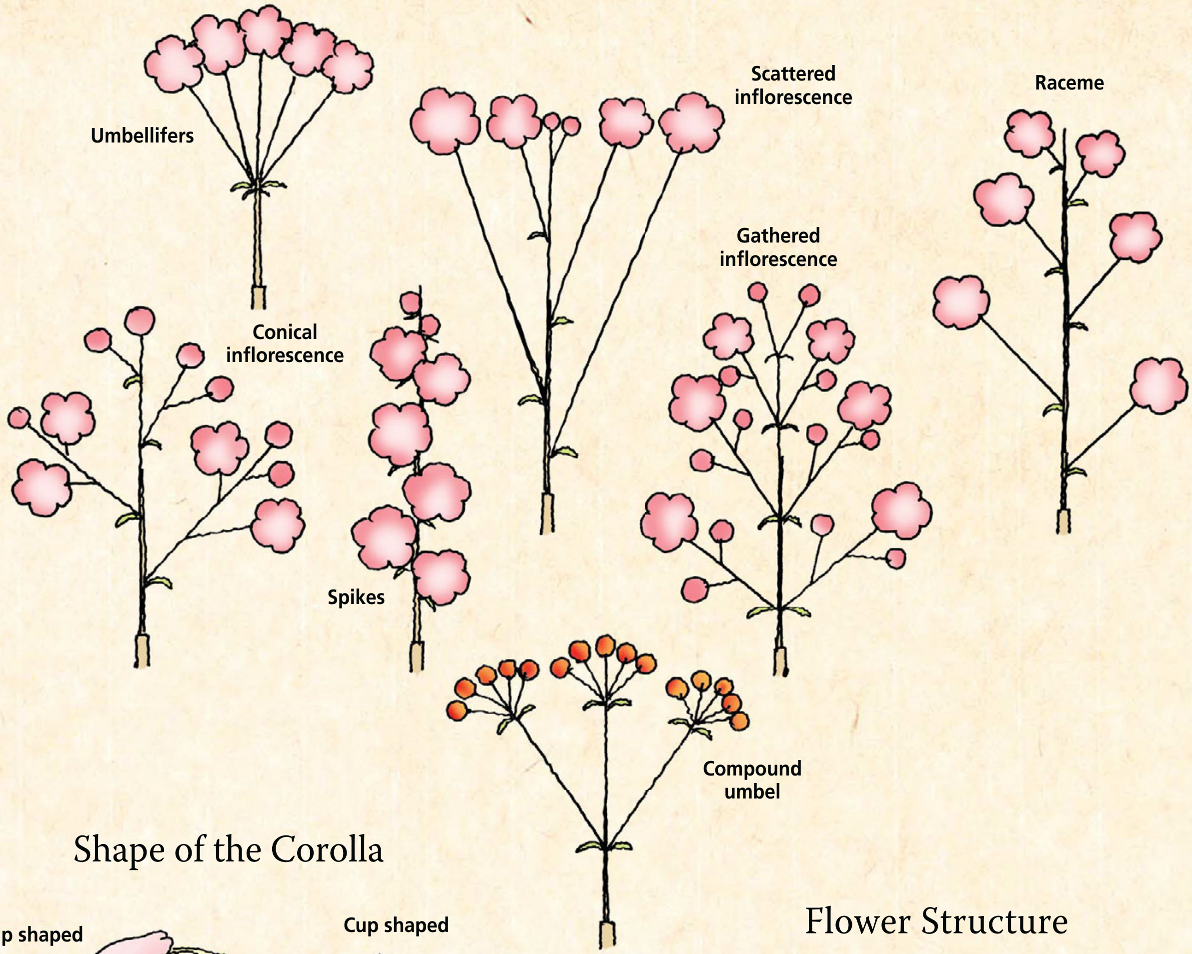
***Yago* bud** Among the adventitious buds, the buds that grow from the base of the trunk. These are liable to become independent trunks.

Example: *Yatsufusa* juniper

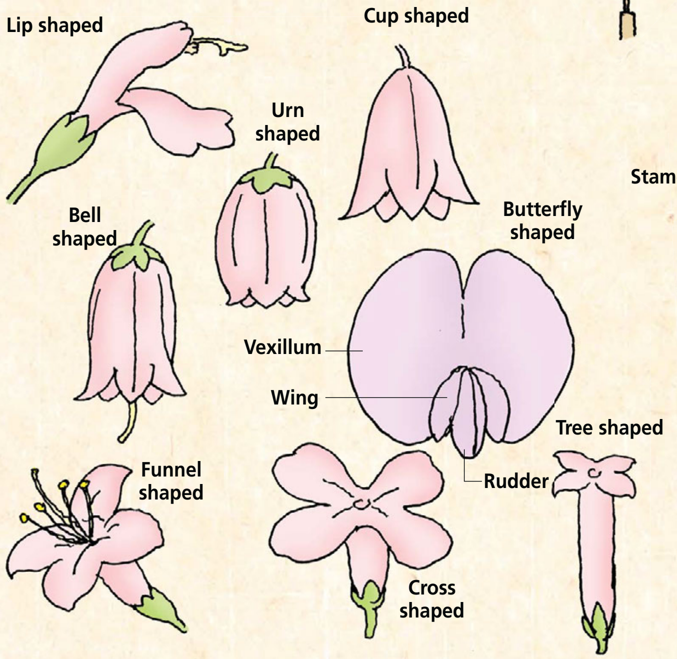


***Yatsufusa* (dwarf variety)** A tree with smaller leaves and smaller aspect than a typical tree of the same species. It is common in conifers such as *goyo* pine, spruce pine and temple juniper, but is also found in various other trees.

Shapes of Inflorescence

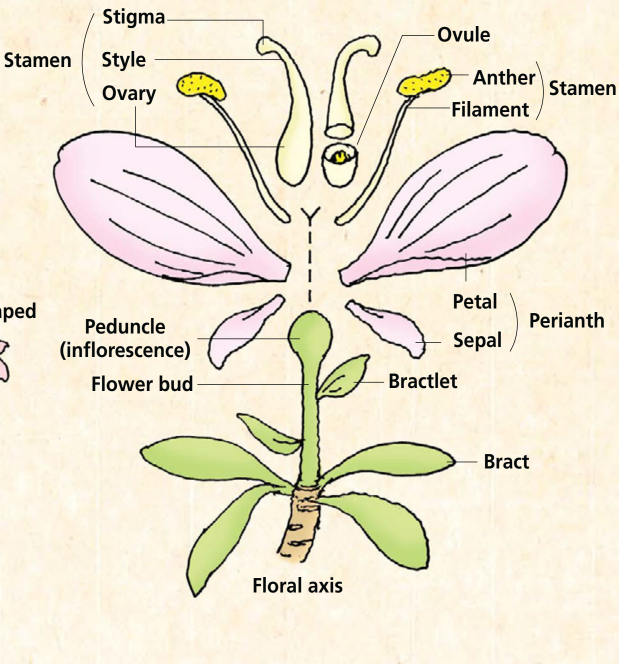

Umbellifers
Scattered inflorescence
Raceme
Gathered inflorescence
Conical inflorescence
Spikes
Compound umbel

Shape of the Corolla

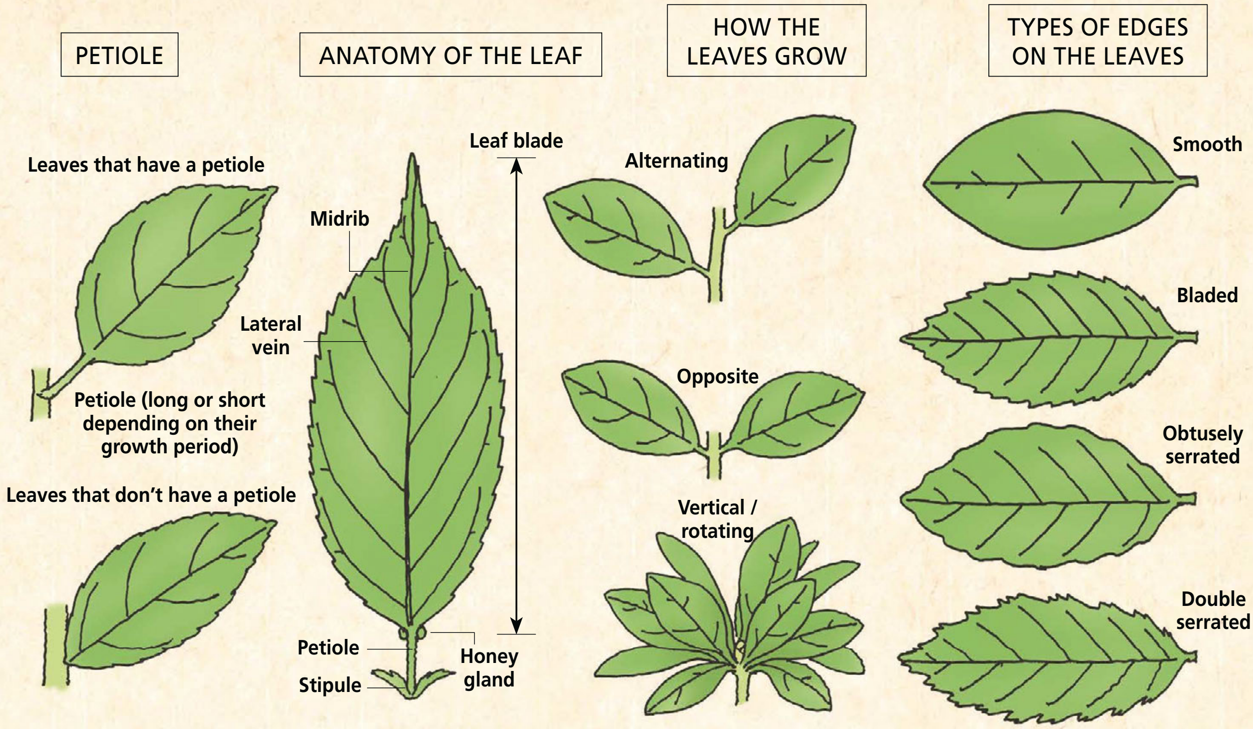

Lip shaped
Cup shaped
Urn shaped
Bell shaped
Butterfly shaped
Vexillum
Wing
Tree shaped
Rudder
Funnel shaped
Cross shaped

Flower Structure

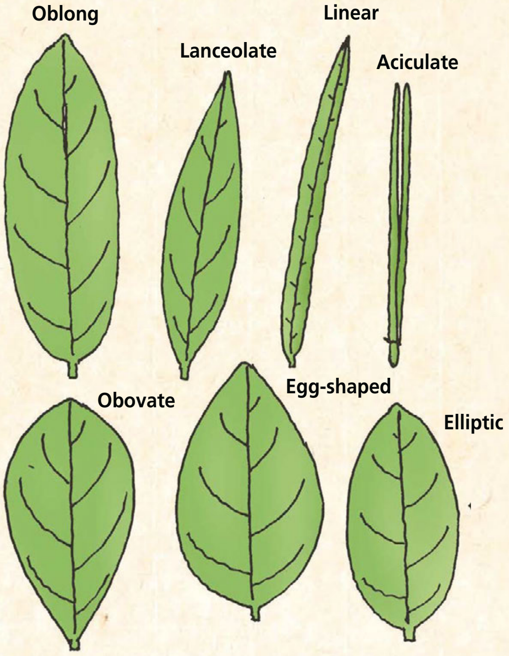
(Dicotyledonous Plant)


Stigma
Stamen
Style
Ovary
Ovule
Anther
Filament
Stamen
Petal
Sepal
Perianth
Peduncle (inflorescence)
Flower bud
Bractlet
Bract
Floral axis

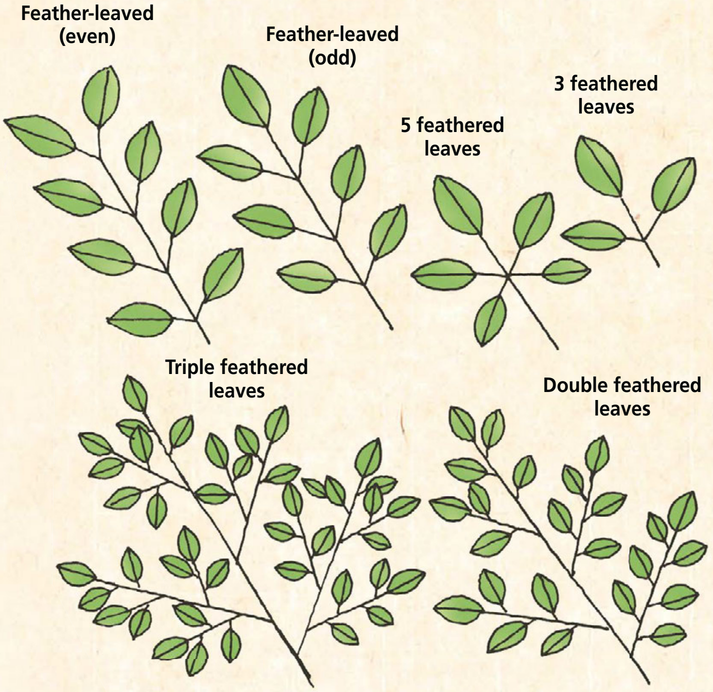
Names of Leaf Parts and How They are Attached


PETIOLE
ANATOMY OF THE LEAF
HOW THE LEAVES GROW
TYPES OF EDGES ON THE LEAVES
Leaves that have a petiole
Petiole (long or short depending on their growth period)
Leaves that don't have a petiole
Leaf blade
Midrib
Lateral vein
Petiole
Stipule
Honey gland
Alternating
Opposite
Vertical / rotating
Smooth
Bladed
Obtusely serrated
Double serrated

Various Shapes of Leaves


Oblong
Lanceolate
Linear
Aciculate
Obovate
Egg-shaped
Elliptic

Various Compound Leaves


Feather-leaved (even)
Feather-leaved (odd)
5 feathered leaves
3 feathered leaves
Triple feathered leaves
Double feathered leaves

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Bonsai Sekai (*Bonsai World*) is a Japanese magazine first published in 1970. Over the years, it has brought together practitioners from all over the world, sharing techniques, announcing exhibitions and fostering a love of bonsai.

Kyosuke Gun has been a botanical illustrator and bonsai practitioner for nearly fifty years, growing approximately 450 species and nearly 5,000 plants over the decades. His drawings are loved by enthusiasts for the way they simplify the explanation of procedures. They have appeared in many bonsai books and magazines in Japan.

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